NOT TO BE TAKEN AWAY

ST MARY'S HOSPITAL MEDICAL SCHOOL LIBRARY

THE

BRITISH JOURNAL

OF

CHILDREN'S DISEASES.

VOL. X. JANUARY, 1913. No. 109.

Original Articles.

EPIDEMIC CATARRHAL JAUNDICE.*

By LEONARD GUTHRIE, M.D., F.R.C.P.

Physician to Paddington Green Children's Hospital, London.

SPORADIC cases of catarrhal jaundice in children are not uncommon, especially in the winter months, and they occur more frequently in some seasons than in others.

Hence, if one sees a few more cases than usual in cold weather, the fact may be regarded merely as a coincidence. The idea that an epidemic of catarrhal jaundice is prevalent and that the disease may be communicable by one patient to another does not readily assert itself. More commonly, catarrhal jaundice is regarded as an individual ailment, and attributed to "a chill on the liver," to gastro-duodenal catarrh, or to immoderate indulgence at table.

When, however, one meets with a number of cases of jaundice in the same district, and when two or more members of the same family are affected at or about the same time, one is bound to presume that some cause of infection common to all is at work—in other words, that one is in the presence of jaundice in an epidemic form.

Had it not been for the presence of the circumstances mentioned I should hesitate to describe the small number of cases of catarrhal

* A paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine on November the 22nd, 1912.

338.1
N

jaundice—only ten in all—which I met with last winter as instances of epidemic catarrhal jaundice.

The ten cases of jaundice to which I refer all occurred during the months November, December, 1911, and January, 1912. Eight of them were in the contiguous districts of Paddington, Kilburn Park, Harrow Road, and St. John's Wood, and two were in Walthamstow.

Seven of the patients were female and three were male. Their ages varied between three and eleven years.

In three instances more than one member of the same family were affected.

In one family two sisters, in another two sisters and one brother, and in a third a brother and sister became jaundiced within a fortnight to three months of each other. Thus seven of the patients were related as brothers or sisters.

The remaining three cases were sporadic and unrelated to each other.

The jaundice was deep in all cases and associated with clay-coloured stools and bilirubinuria. The average duration was three to four weeks, but in one case it only lasted a week. The icterus was ushered in by malaise, languor, and sometimes drowsiness; the temperature was usually slightly raised (99°—100° F.). Anorexia was the rule, but in one case the appetite was said to be voracious, especially for eggs. Vomiting occurred in two cases, vomiting and diarrhœa in one, vomiting and constipation in another. In one case complaint was made of itching. Bradycardia was not observed in any. The lowest pulse-rate recorded was 66 in one case. As a rule it varied between 72 and 96. A pulse of 120–130 was noted in two cases, whilst the temperature was elevated.

The liver was enlarged in six cases, and greatly so in four. In these it extended to within an inch or an inch and a half of the umbilicus. It was smooth in all cases and not tender in any. As soon as bile appeared in the stools and disappeared from the urine the liver slowly subsided, and became normal in size in from one to two weeks. The four cases in which no hepatic enlargement was noted were seen only when convalescent.

The exact interval which elapsed between the onsets of jaundice in different members of the same family could not in all cases be determined. In one family a girl became jaundiced exactly a fortnight after her sister. In another family a girl became jaundiced on December the 4th and her brother on December the 16th, 1911. Their elder sister, aged 11 years, had had jaundice some time in the previous November. In the third family, a boy aged 6 years was

jaundiced in November, 1911, and his sister aged 3 years became so on January the 9th, 1912.

Apparently all cases began with definite malaise and probably some slight pyrexia, but none of the patients was seriously ill at any time. In this respect there was no difference between the sporadic and the other cases. The hepatic enlargement was as marked in the former as in the latter.

In one of the sporadic cases it extended to within one inch, in another to within an inch and a half of the umbilicus, and in the third it could be felt one inch below the ribs.

In two of the familial cases the liver reached to within one inch of the umbilicus, and in all the rest it was more or less enlarged.

There seems no reason to doubt that the sporadic cases were of the same nature as those which occurred in families.

No relapse occurred in any of the cases and recovery was uneventful.

Epidemics of catarrhal jaundice have been recorded in many parts of the world. For a full bibliography and complete account of such, reference may be made to an important paper, " Catarrhal Jaundice, Sporadic and Epidemic, and its Relation to Acute Yellow Atrophy of the Liver," by E. A. Cockayne, ' Quart. Journ. Med.,' Oxford, 1912, vi, p. 1.

I must express my indebtedness to this paper for many of the facts mentioned in my own.

I wish to mention specially epidemics which have occurred in our own country, and to draw attention to the fact that they have been especially prevalent here during the past three years.

Dr. Cockayne's earliest reference is to an epidemic in 1852 almost confined to children living in Birmingham, or its neighbourhood, and lasting from September to November. Montagu Champneys described one in east Sussex in 1861 which affected eighteen individuals of all classes, whose ages ranged from eight to seventeen.

In 1863 at least 300 people, both children and adults, were affected at Rotherham, and small outbreaks in all parts of the country have been especially numerous in 1894, 1901, 1910, 1911–1912.

In the ' British Medical Journal,' vol. ii, 1911, reports of small epidemics of catarrhal jaudice are given by C. H. Miles (Stantonbury, Bucks), July to August, 1911 (p. 379) ; by R. F. Campbell (Wark upon Tyne), Winter, 1909 to 1910 (p. 1695) ; Eva McCall (Cambridge), Winter, 1909 to 1910 (*ibid.*) ; W. Brown Holderness

(Windsor), October, 1911 (p. 1533); Whitaker (Eveshott, Dorset), November, 1910, May, 1911 (p. 920).

These epidemics are not mentioned by Dr. Cockayne, but he records an attack of jaundice experienced by himself, which he attributes to infection from a servant who waited upon him, and who herself suffered from catarrhal jaundice. Fowler, of Ellon (E. Aberdeenshire), witnessed an epidemic in autumn, 1911. Ralph Poignanp ('Brit. Med. Journ,' 1912, i, p. 72) met with ten cases in children, aged six to twelve, in Suffolk. Gale, of Sheffield, attended a brother and two twin sisters who were attacked by jaundice in September–October, 1910. H. Vickery ('Brit. Med. Journ.,' 1912, ii, p. 907) gives an account of several cases which occurred in scattered villages in the neighbourhood of Cheriton Fitzpaine, Devon.

In the Stantonbury epidemic children aged between four and twelve were attacked. The duration of jaundice was short; there were no relapses and no history of catarrhal gastritis. The obstruction was incomplete, for the motions contained bile. Constipation was severe. Pruritus and bradycardia were absent.

At Wark-on-Tyne fifteen cases occurred within an area of seven miles. In more than one house two children, and in one house three, were simultaneously affected. The patients were from four to twelve years of age, but one was a girl, aged 16 years. Her two younger brothers were jaundiced at the same time.

At Cambridge seven young children and two lads, aged 15 years, were attacked. In two instances two members of the same family suffered from jaundice.

At Windsor seven cases occurred in a girls' school after the girls had taken a walk on a cold, wet day. Malaise and vomiting followed by jaundice were the chief symptoms. In two cases the liver was enlarged, and in one it was greatly so.

At Eveshott (Dorset) fourteen cases of jaundice occurred in three villages between November, 1910, and May, 1911. The patients' ages were from six to thirty years. The worst cases were in adults, who suffered from severe epigastric pain and vomiting. The liver was slightly enlarged. The duration of jaundice was a week to ten days.

Epidemic Infectious Jaundice and Epidemic Catarrhal Jaundice.

A distinction should be drawn between epidemic infectious jaundice, described by Weil in 1886, and epidemic catarrhal jaundice.

Weil's disease was also described by Lancereaux in 1882 as "Ictère grave essentiel," by Landouzy in 1883 as "Fièvre bilieuse" or "Typhus hépatique bénin," and by Matthieu in 1886 as "Ictère fébrile à rechutes."

Except in degree of severity the symptoms of Weil's disease do not differ markedly from those of epidemic catarrhal jaundice. The most severe cases of the latter may be very like the milder forms of Weil's disease.

Icterus in Weil's disease is associated with urticaria, petechiæ, hæmorrhages from the nose, stomach and elsewhere, fever, enlargement of the spleen, nausea, vomiting, diarrhœa and albuminuria. Nervous symptoms exactly like those of acute yellow atrophy may end the scene. Relapses are common, and in some cases a remarkable urinary crisis attended by polyuria and excessive excretion of urea takes place on the seventh or ninth day (Kelsch, 'Rev. de Méd.,' Paris, 1886, vi, p. 657).

The mortality varies from 10 to 60 per cent. Post mortem, the changes are those of acute yellow atrophy of the liver, or extreme fatty degeneration with diffuse hepatitis and leucocytic infiltration near the portal spaces.

Ætiologically, Weil's disease has been traced to contaminated food or water. In some cases *Bacillus proteus fluorescens* has been found in the urine and internal organs of the patients. Jaeger also found it in ducks which were dying of jaundice on the same water which had been drunk by human sufferers from the same disease. The jaundice is at first acholuric or hæmolytic like that experimentally produced by toluylendiamine. Later, bile appears in the urine and disappears from the stools.

In this country *epidemics of catarrhal jaundice* have always been mild in character. No deaths have occurred, but in other countries fatalities have occasionally been recorded. One hundred and sixty-one deaths occurred in a total of 22,569 cases amongst the Federal troops of America. Kissel, in the Moscow epidemic, found six fatal cases out of ninety-six in children aged between two and four years. The liver was enlarged in the first four cases and the spleen in the first two.

The liver showed proliferation of the epithelium of the hepatic ducts and proliferation of the bile-ducts themselves at the periphery of the liver-lobules. The liver-cells in the centre of the lobules were necrosed and all showed fatty degeneration.

In all the fatal cases there were severe nervous symptoms, loss of consciousness, great restlessness, universal twitchings of muscles, and

disturbance of heart's action and respiration. In the epidemics in Saxony, 9 out of 313 cases died. Seven of the fatal cases were aged from four months to twelve years, and two were sixty and sixty-eight years old respectively. In one of the fatal cases the symptoms and state of the liver resembled those of acute yellow atrophy.

From the description given by Cockayne of outbreaks abroad, it is obviously very difficult to distinguish between epidemics of infectious jaundice and those of epidemic catarrhal jaundice.

The diseases resemble each other in symptoms and morbid anatomy; fatal cases of either are hardly to be distinguished in these respects from acute yellow atrophy or from fatal cases of sporadic jaundice (so-called).

Cockayne cites many instances in which acute yellow atrophy of the liver has affected more than one member of families, and has occurred with such frequency, especially among pregnant woman, as to suggest the prevalence of a specific cause.

In the case of Weil's disease the infection is probably due to the ingestion of contaminated water or food, but may be due to some biting insect.

It is essentially a filth disease, and is chiefly confined to the districts round the Mediterranean Sea, whereas epidemic catarrhal jaundice occurs all over the world.

In the case of *epidemic catarrhal jaundice* and sporadic jaundice the cause is unknown, but there is every reason for supposing them to be due to some common organisms widely spread and capable of giving rise to an infective hepatitis.

Cockayne believes the infection to be air-borne, and not, as in Weil's disease, conveyed by food or water.

It appears to be most infectious at the time of invasion and not in later stages.

Acute yellow atrophy Cockayne regards as due in the great majority of instances to the same unknown organism acting upon a liver weakened by some temporary strain such as pregnancy, or having some inherent weakness. This explanation also covers the cases of post-anæsthetic fatalities with jaundice in which the symptoms closely resemble those of acute yellow atrophy and the pathological changes are of the same nature, although fatty degeneration is more prominent than necrosis of hepatic cells.

The term "catarrhal jaundice" if implying that it is simply due to gastro-duodenal catarrh, the result of chill or over-eating, is perhaps misleading.

The assumption that the jaundice is always the result of mecha-

nical obstruction of the ductus communis by a plug of inspissated mucus may be incorrect.

Blockage of the main duct, as, for instance, by a gall-stone, does not produce such great enlargement of the liver as was present in some of my own series of cases.

It seems more probable that epidemic jaundice, whether in the severe form known as Weil's disease, or in its milder form called catarrhal jaundice, epidemic or sporadic, is an example of acute general hepatitis produced by organisms or toxins which may not be the same in all cases. Blockage of the main duct may be secondary to hepatitis, descending and not ascending the duct.

C. H. Miles attributed the Stantonbury epidemic, which has been mentioned, either to pneumococcal infection or to invasion by some oral germ. He was able to exclude ptomaine poisoning as the cause, and the milk, water supply and drains in the neighbourhood were above suspicion.

The influenza bacillus has been blamed by some (Meinert, Brünler and Bonome), and has actually been found by the last-named in the blood, spleen, and liver of two children in whom acute yellow atrophy of the liver, together with *B. coli*, were found after death.

But, as Cockayne remarks, there seem to be no good grounds for regarding catarrhal jaundice as a form of influenza.

Cockayne refers to the possible relationship or analogy between mumps and catarrhal jaundice. The metastases which occur in mumps, and the fact that other glands such as the testis and pancreas may be affected, with or without involvement of the parotid, suggest that the infection reaches the parotid or other glands by the blood-stream. In mumps it is possible that the blockage of Steno's duct may be secondary to inflammation of the parotid itself, and in jaundice the obstruction of the bile-duct may be secondary to hepatitis.

I am indebted to Dr. F. E. Batten for an interesting observation on the association between mumps and catarrhal jaundice in the wards of the Hospital for Sick Children, Great Ormond Street. A nurse in one of the wards developed mumps on December the 1st, 1911. Between December the 7th and the 10th six children in her ward also contracted mumps. On January the 2nd, 1912, another nurse employed in the same ward became feverish, vomited, and developed jaundice on January the 8th, which lasted till January the 17th, but she did not contract mumps. A third nurse developed mumps on December the 10th, 1911, and also suffered from very severe abdominal pain and vomiting, which Dr. Batten attributed to

pancreatitis. He is inclined to regard pancreatitis as the connecting link between mumps and jaundice in these cases.

I have already alluded to the Eveshott epidemic of catarrhal jaundice, in which severe epigastric pain and vomiting were prominent symptoms in adults, and were, perhaps, due to pancreatitis.

Further investigations are needed as to the prevalence of mumps and epidemic catarrhal jaundice at the same time.

The connection does not seem obvious, yet it is possible that mumps, acute pancreatitis and hepatitis (catarrhal jaundice) may sometimes be allotropic examples of one and the same affection.

The occasional association of jaundice with specific fevers, such as intermittent, remittent, relapsing, typhus, enteric fever, diphtheria, and scarlatina, has been observed.

Three cases of pancreatitis with jaundice in scarlatina, and one in diphtheria, have been recorded in the 'Lancet,' 1912, ii, p. 1295, by W. L. Goldie, who refers to another case described by Sidney Phillips of jaundice in a patient suffering from scarlet fever, who also had parotitis and abdominal symptoms suggestive of pancreatitis. The parotitis occurring in specific fevers is, however, probably not due to the specific infection of mumps. Whether jaundice in such cases is toxæmic or due to a specific hepatitis, or dependent on obstruction to the hepatic duct by swelling of the head of the pancreas, is undecided.

The jaundice in infectious fevers is usually described under the heading "toxæmic," but Roberts ('Practice of Medicine') and Sidney Phillips both incline to the view that it results from obstruction.

The chief points to which attention is drawn in this paper are:

(1) That mild epidemics of so-called catarrhal jaundice have been specially prevalent in this country during the past three years.

(2) That although mild in character hitherto, it is possible that at any time they might become more formidable.

(3) That catarrhal jaundice must be regarded as due to an acute hepatitis resembling mumps in some particulars.

(4) The prognosis in any given case of jaundice in children, whether apparently sporadic or occurring in the course of epidemics, must be guarded. For we have no means of knowing whether it will run a mild and normal course, or terminate as a case of acute yellow atrophy of the liver.

Finally, the question asked by the mother of one of my patients, "Is jaundice catching?" can no longer be answered in the negative, as I think it would have been some years ago.

THE INCLUSION BODIES IN SCARLET FEVER.

By John Granger, M.B., Ch.B.Glasg.,
Assistant Medical Officer, Grove Fever Hospital, London; and

C. Kingsley Pole, M.B., Ch.B.Edin.,
House Physician, West Ham and East London Hospital.

Every medical officer in a fever hospital knows how difficult it is to arrive at a diagnosis in certain cases certified to be suffering from scarlet fever. Many patients are admitted with a very indefinite history, a faint rash, little or nothing wrong with the throat, and one has to adopt a "wait and see" policy before a definite opinion can be expressed. Should it be possible, therefore, by the aid of the inclusion bodies first described by Döhle, of the Pathological Institute of Kiel, to make a definite diagnosis of scarlet fever within the first four days of the illness, one might expect the number of so-called relapses and second attacks of scarlet fever to be greatly reduced. So far no investigations on these bodies have appeared in the medical literature of this country. Considerable attention, however, has been devoted to the subject in Germany, and even more so in the United States, where the City Health Department of Boston has recently announced that it is prepared to examine blood-films from suspected cases of scarlet fever and report on the result.

Before relating our own investigations on this subject a review of previous work will be given. The inclusion bodies were first described by Döhle in an article published in November, 1911. In the examination of blood-films from thirty patients suffering from scarlet fever, he found almost invariably some bodies in the polymorphonuclear leucocytes. In a few cases they were extra-cellular. They were most likely to be found in the blood shortly after the appearance of the eruption. He examined the blood in numerous other cases, but in three only, viz. one case of pneumonia and two cases of cancer, could he find similar bodies.

Subsequently Kretchmer, assistant in the Strassburg Children's Clinique, published the results of an examination of blood-films taken from thirty cases of scarlet fever. In fifteen cases, in which daily examinations were made, the bodies disappeared from the blood from the fifth to the tenth day. In one case they were present on the fifteenth day and in another as late as the twenty-eighth day. He found the bodies present in one case before the eruption appeared.

He also examined the blood of seventy controls, including persons in normal health, cases of diphtheria, measles, sepsis, serum sickness, and other acute and chronic affections. The bodies were found in one case of pneumonia with cervical abscess, two cases of diphtheria, and in one of nine cases of tuberculosis. They were absent in six cases of cancer and six of syphilis.

Nicoll and Williams, of New York, in an examination of fifty-one cases of scarlet fever found the bodies in forty-five. In the six negative cases the patients had been ill for eight days or longer. Of twenty-five controls only three showed the bodies, viz. one case of pneumonia with lues, one of erysipelas, and one of measles with broncho-pneumonia. The other cases, including normal persons, measles, diphtheria and serum rashes were negative. The authors concluded that an examination of the blood in the first week of illness would differentiate scarlet fever from measles, German measles, and probably toxic rashes; but they could not say whether such an examination would eliminate rashes due to sepsis, influenza, and tonsillitis from the diagnosis.

In a later paper Nicoll reported his findings in 115 cases of scarlet fever and 80 controls. In fresh cases of scarlet fever the bodies were found in almost all the polymorphs. He failed to find the bodies in sixteen cases, viz. one case of fulminating scarlet fever, one case of doubtful diagnosis, and fourteen who had been ill for over seven days. His findings were negative in a large number of controls, *e. g.* normal blood, diphtheria, syphilis, whooping-cough, measles, German measles, follicular tonsillitis, dermatitis exfoliativa, serum rashes and intestinal toxæmias. He found the bodies, however, in eight cases of erysipelas, one of empyema and four of typhus fever.

J. A. Kolmer, of Philadelphia, examined 200 cases of scarlet fever, in 119 of which he found the inclusion bodies. The bodies were present in 100 per cent. of cases of one and two days' duration. Thereafter the percentage showing them diminished to 25 on the eighth day. After that date they were seldom found. The inclusion bodies were also found in a large percentage of cases of diphtheria during the first four days. Among his control cases, seven out of eleven cases of erysipelas and two out of three cases of lobar pneumonia were positive; twelve cases of measles and two of German measles were all negative.

J. Ahmed, in observations made at the Virchow Hospital in Berlin, found the inclusion bodies present in scarlet fever, acute tuberculosis, typhoid, measles, German measles and erysipelas. He

thought the bodies were fragments of nuclei, and denied their diagnostic value.

Johanna Schwenke, of Breslau, examined the blood of eighty-one acute affections, including eleven cases of scarlet fever. All the cases of scarlet fever examined in the first week of illness showed the inclusion bodies. The number of bodies varied, the milder cases showing fewer and smaller bodies than were seen in the more severe cases. The number of bodies diminished from day to day, and after the seventh day they were found only in a few cases. Fourteen cases of lobar pneumonia in children from two to ten years old were examined and all showed the presence of inclusion bodies. In twelve of these 50 per cent. and in the other two 35 per cent. of the polymorphs contained the bodies, which were indistinguishable from those found in scarlet fever.

In undertaking this research at the instigation of Dr. J. D. Rolleston, to whom we are indebted for various suggestions in the preparation of this paper, we set out with the following objects :

(1) To find out if the inclusion bodies were present in all cases of scarlet fever.

(2) To determine the date of their disappearance.

(3) To see if they were present in diseases which might be mistaken for scarlet fever, *e. g.* diphtheria, measles, tonsillitis, and rashes due to sepsis, enemata, drugs and intestinal intoxications.

(4) To estimate their diagnostic value.

For this purpose we examined blood-films from 191 cases of scarlet fever, 37 cases of measles, 27 cases of diphtheria, 24 cases of tonsillitis, 20 cases of whooping-cough, 20 cases of serum rash, 7 cases of urticaria, 4 cases of pneumonia, 3 cases of erysipelas, and 10 normal patients.

Several methods of staining can be used. We adopted Manson's stain at first, but later found we could get better results, and with less trouble, by staining with carbol methylene-blue.

(1) *Manson's stain.*—The slides are fixed in alcohol and formalin, washed in water, and stained for twenty-five seconds with Manson's stain. (Mix 5 per cent. methylene-blue in a 2 per cent. boiling borax solution, allow to cool and filter.) The red corpuscles are stained greenish-blue, the nuclei of the polymorphs are stained deep blue, the protoplasm is very faintly stained, and the inclusion bodies are stained less deeply than the nucleus, but more deeply than the protoplasm.

(2) *Carbol methylene-blue.*—The slides are fixed by passing three or four times through the flame after having been dried in the air.

They are then dipped in water. The extra water is removed by one or two vigorous shakes, and they are then stained by carbol methylene-blue for thirty seconds (methylene-blue 1·5 grm., absolute alcohol 10 c.c., 5 per cent. solution of carbolic in water 100 c.c.). The red corpuscles are not stained. The appearance of the polymorphs and bodies is the same as in Manson's stain.

We found that the inclusion bodies presented the appearance described by Döhle. They vary in size, from a micrococcus to a large bacillus, and may be coccus-shaped, ovoid, pyriform, or curved. They are quite distinct from the nucleus, and are situated most frequently towards the periphery of the cell, but occasionally are found between the limbs of the nucleus. They are present in the polymorphonuclear cells only. Occasionally little particles staining a deep blue colour are found extra-cellular, but they do not occur in every slide, and are probably blood-platelets. They were not seen in any of the slides stained by the carbol methylene-blue method, and although Döhle mentions them in his original paper, none of the other observers have remarked on them. The number of cells containing the bodies and the number of bodies present in each cell vary, and bear no relation to the severity of the illness, though they do seem to diminish in number with the duration of the attack. There is no difference in the staining reaction or appearance of the bodies found in scarlet fever, measles, diphtheria, and other diseases.

Table I.

Day of illness.	Number examined.	Number positive.	Percentage positive.
1st	2	2	100
2nd	16	14	87·5
3rd	25	24	96
4th	14	13	92
5th	18	15	83·5
6th	12	9	75
7th	12	8	66·6
8th	12	3	25
9th	12	1	8·3
10th	12	0	0
11th to 30th	20	3	15·0

Table I gives the results of our examination of 155 cases of scarlet fever. Two cases were examined on the first day of illness before

the rash had appeared, and were both positive. Sixteen were examined during the second day of illness; of these fourteen were positive and two negative. One of the latter was a case of toxic scarlet fever which died a few hours after admission. The other case was sent to a scarlet fever ward, and had a "relapse" on the thirty-seventh day. Twenty-five were examined on the third day of illness, of which twenty-four were positive and one negative. The latter had a "relapse" on the thirty-ninth day. Of this series of 155 cases, one which gave a positive result on admission had a "relapse." He had a very bad throat and foul mouth when admitted. These three cases gave positive results on the day of "relapse."

In all this series except the two "relapses" the initial diagnosis was confirmed by typical peeling. Thus during the first three days of illness every case of scarlet fever except the toxic case and the two which relapsed showed the inclusion bodies.

Of the cases which had been ill four days before a blood examination was made, one was negative although three films were examined. From the fourth day to the ninth day the bodies were present with lessening frequency, and on the tenth all the cases examined were negative.

From the eleventh to the thirtieth day of illness twenty cases were examined, but in three only were the bodies found, viz. on the sixteenth, twenty-first and twenty-eighth days.

In order to see whether the bodies were present in the polymorphs of patients suffering from secondary cervical adenitis or nephritis, another series of seventeen patients were examined from whose blood we were sure, by a previous examination, that the inclusion bodies were absent before the onset of the complication.

Twelve patients had cervical adenitis with a rise of temperature and malaise, seven of whom were positive. Five who had nephritis were negative, although three films taken on alternate days were examined.

To determine whether the severity of the attack had any relation to the number of inclusion bodies present and to the number of polymorphs containing inclusion bodies, a third series of twelve cases of scarlet fever were examined during the first three days of illness: seven were mild, three moderate and two severe. In each film 100 polymorphs were counted. The number of these containing bodies and the total number of bodies present were noted. The highest and the lowest counts in each class are given in Table II, which shows that no such relation can be traced.

TABLE II.—*Examination of* 100 *Polymorphs, showing* (*a*) *Number containing Inclusion Bodies;* (*b*) *Number of Inclusion Bodies Present.*

Type of disease.	(*a*) Number containing inclusion bodies.		(*b*) Number of inclusion bodies present.	
	Highest number.	Lowest number.	Highest number.	Lowest number.
Mild	92	25	130	39
Medium	87	40	144	50
Severe	78	42	128	52

A fourth series of seven cases of scarlet fever, all of a moderate type, were followed from the day of admission till the bodies disappeared. The number of bodies present in 100 polymorphs is given in Table III.

TABLE III.

Day of disease.	Case 1.	Case 2.	Case 3.	Case 4.	Case 5.	Case 6.	Case 7.
1st	—	—	—	—	—	—	—
2nd	—	120	—	95	62	—	—
3rd	48	95	—	84	58	87	39
4th	84	78	96	57	56	63	76
5th	79	86	130	28	49	52	48
6th	30	42	104	0	23	35	21
7th	0	45	120	0	0	17	15
8th	0	38	65	0	0	0	0
9th	0	0	0	0	0	0	0

It will be seen from the above table that the only common feature is that the bodies tend to diminish in numbers after the fourth or fifth day till they entirely disappear.

Measles.—Our results differ from those of Kolmer and Nicoll and Williams, and accord with those of Ahmed, in that a large number of our cases of measles showed inclusion bodies.

Forty cases of measles were examined, the results being given in Table IV.

The summer and autumn were very wet and inclement, and many of the children had severe broncho-pneumonia, but even in those free from bad bronchitis on admission, quite a large number gave positive results.

TABLE IV.

Day of disease.	Number examined.	Number positive.
2nd	4	2
3rd	6	3
4th	12	5
5th	9	4
6th	6	2
7th	2	0
8th	1	1
9th	0	0

Diphtheria.—Nicoll and Williams did not find the inclusion bodies present in diphtheria, but Kolmer states that quite a large percentage of his cases up till the fourth day of illness showed them. Ahmed also found the bodies present in diphtheria.

Our results are shown in Table V. Twenty-seven cases were examined, in which the clinical diagnosis of diphtheria was confirmed bacteriologically.

TABLE V.

Day of disease.	Number examined.	Number positive.
1st	3	2
2nd	4	2
3rd	5	4
4th	10	7
7th	1	0
(?)	4	2

Tonsillitis.—Films from twenty-four cases were examined; these included follicular tonsillitis, parenchymatous tonsillitis, peritonsillar abscess, and Vincent's angina. Of these fourteen gave a positive result.

Toxic rashes.—We examined blood-films from twenty cases of serum sickness and fifteen cases of urticaria due to other causes, but in none of these were able to find the inclusion bodies.

Other cases examined included three cases of pneumonia, of which two were positive, four cases of erysipelas, all positive, and twenty cases of whooping-cough, of which one only was positive. This latter had a very purulent rhinorrhœa. Ten persons in normal health were examined, and were all negative.

Unfortunately, we had no opportunity of examining blood from patients suffering from German measles.

The question as to the nature of the inclusion bodies has not yet been settled. Döhle, in his second paper, regards them as the fragments of a spirochæte, which has been taken up by the polymorphs and partly disintegrated. He reproduces a micro-photograph of a blood-film, in one of the polymorphs of which is shown an inclusion body with a somewhat sinuous appearance, which he has called the spirochæte of scarlet fever. Schwenke thinks that they may be the expression of a reaction of the hæmo-poietic system to bacterial poisons analogous to leucocytosis. A more probable view seems to be that of Kolmer, who regards them as being a product of degenerative change in the cytoplasm of the cell.

Conclusions.—(1) Except in the extremely fatal toxic type of scarlet fever, Döhle's inclusion bodies will probably be found in every true case of scarlet fever during the first four days of illness. The absence of the bodies practically excludes scarlet fever.

(2) The bodies are present in almost every case up to the fourth day, after which they appear with lessening frequency and are absent in most cases after the eighth day, though in some few cases they may be found as late as the third or fourth week.

(3) The bodies are present in quite a large proportion of cases of diphtheria, measles and tonsillitis. Therefore the presence or absence of the bodies is of no use in making a differential diagnosis between these diseases and scarlet fever.

(4) The bodies are found in most diseases caused by ordinary pyogenic organisms, especially if streptococci are present.

(5) The bodies are absent in toxic rashes.

(6) It is impossible to diagnose scarlet fever from film examination alone.

References.

(1) Ahmed, J.—'Berl. klin. Woch.,' 1912, xlix, p. 1232.
(2) Döhle.—'Centralbl. f. Bakt.,' 1911, lxi, Orig., p. 63; *ibid.*, 1912, lxv, p. 57.
(3) Kolmer, J. A.—'Am. Journ. Dis. Child.,' 1912, iv, p. 1.
(4) Kretchmer, M.—'Berl. klin. Woch.,' 1912, xlix, p. 499.
(5) Nicoll, M., jun.—'Arch. of Ped.,' 1912, xxix, p. 416.
(6) Nicoll, M., jun., and Williams, A. W.—*Ibid.*, p. 350.
(7) Schwenke, J.—'Jahrb. für Kinderheilk.,' 1912, lxxvi, p. 436.

HEDONAL ANÆSTHESIA: ITS USE IN CHILDREN.*

By L. E. Barrington-Ward, M.B., Ch.B., F.R.C.S.Edin. & Eng.,
Resident Medical Superintendent, Hospital for Sick Children, Great Ormond Street, London.

I propose to place before you to-night the impressions I have formed from the administration of hedonal by the infusion method to children.

Mr. Page was kind enough to allow me to see some of his administrations in the case of adults at St. Thomas's Hospital last February, and it then struck me as desirable to give the method a trial in the case of children.

Of the routine anæsthetics, chloroform is by no means ideal, and in certain states may act as a deadly poison. Slight degrees of delayed chloroform poisoning are of common occurrence and frequently pass unnoticed. In the year 1911 there were six fatal cases of acetonæmia after anæsthetics in the Hospital for Sick Children. Ether administered by the open method with a preliminary injection of morphia and atropine is excellent for most conditions in the surgery of children, but in certain operations, *e. g.* on the brain and chest, it is inadmissible, and chloroform has to be employed.

I thought, perhaps, hedonal might fill a want in anæsthesia, and determined to give it a trial. The number of my cases—seventy—is comparatively small to judge the effects of any anæsthetic, but it has been sufficient to convince myself of certain disadvantages and advantages of hedonal anæsthesia as applied to children. The first fifty cases were for all kinds of conditions, but in the last twenty only those cases were selected for which hedonal was thought to be particularly suitable.

Method of administration.—A −75 solution of hedonal was used according to Mr. Page's technique. As a rule the internal saphenous vein was selected. It is by far the most convenient in children. It is constant in position, out of the way of the operator, and obtrudes itself less on the patient. The vein was exposed under ½ per cent. novocaine infiltration, and in very few instances did the child resist or make any complaint. The cannula has, of course, to be of appropriate size. The youngest patient anæsthetised by this method was nine days old, and in this case I had but little difficulty in inserting the cannula into the median basilic vein. The insertion of the cannula is not always an easy matter, and it is one of the disad-

* A paper read before the Medical Society of London on October the 28th, 1912.

vantages of the method that practically an operation has to be performed to find the vein before the main interference. In only one case were the veins found to be too small for the purpose. In two other cases I failed to induce anæsthesia; in one, clotting occurred in the cannula before anæsthesia was complete, and open ether had to be given; in the other too small a cannula was used for a large child, with the result that anæsthesia was never properly established.

Induction took on an average seven minutes, and the amount of solution varied from 30 c.c. in a child of nine days to 680 c.c. in a boy of seven years. It varied within fairly wide limits, the variation being due to the size of the cannula and of the vein. A small quantity run in quickly induced anæsthesia sooner than a much larger quantity run in slowly. After the injection of a few c.c. the child appears to drop off to sleep. There is very rarely any excitement. The respirations are quiet. The colour is abnormally pink. The pupil is contracted. The corneal reflex is abolished very early, and is quite useless for estimating the degree of anæsthesia. I have found the only satisfactory way of estimating the depth of anæsthesia is by slight cutaneous stimuli, such as a pin-prick. It is not at all infrequent for the patient to make movements in reaction to the stimulus of the skin incision. During the subsequent manipulations even the peritoneum can be freely handled without calling forth any reaction, but if the skin is at any time stimulated slight movements occur. The uncertainty as to whether complete anæsthesia has been reached is one of the great disadvantages. In children I believe there is a very small margin between the complete abolition of the skin reflex and the danger sign of respiratory depression. One of the most striking features is that even if the skin reflex is present, muscular relaxation is considerable. The colour of the patient—provided there is no mechanical obstruction to respiration, such as the falling back of the tongue—is always remarkably good. In one case in which stoppage of respiration had occurred the colour was pink for some time after respiration had stopped, and no warning such as cyanosis was given. When once anæsthesia has been established very little hedonal, if any, is required to be given to maintain it. In nine cases no further anæsthetic at all was necessary for operations lasting eighteen to fifty minutes. In these cases, however, slight movements occurred on inserting the skin sutures—not, as a rule, sufficient to embarrass the operator.

In my experience the colour has not been particularly useful in warning one of danger. Gradual slowing of the respiration and

deep sighing with apnœic pauses are signs that the drug has been pushed too far. In no case was there any trouble as regards the vein or the wound.

In this series I have to report one fatality. I gave a full account of it at the time before the Anæsthetic Section of the Royal Society of Medicine. It was the sixth case of the series.

The patient was a girl, aged 8 years, with tuberculous glands of the neck. The operation was just being completed, skin stitches were being put in when the child was noticed to have stopped breathing. The colour was good and the air-passages free.

All efforts to resuscitate by artificial respiration failed. 300 c.c. of solution had been used to induce anæsthesia and 200 had been given during the progress of the operation, which had lasted thirty minutes. A post-mortem examination by an independent pathologist revealed the condition of status lymphaticus. There was wide-spread and marked hypertrophy of all the lymphoid tissue of the body, and the heart was fatty. The condition of status lymphaticus is a curious one, concerning which but little is known, except the liability to sudden death, especially when under the influence of anæsthetics. In the light of subsequent experience I am inclined to believe that more of the anæsthetic was administered after anæsthesia had been induced than was absolutely necessary—not sufficient, however, to have given rise to any trouble in a healthy child. The post-mortem conditions were exactly those that are found in unexplained chloroform deaths, and I believe that with chloroform the unhappy result might have been the same. In only one other case had I any anxiety, and that was a similar type of child. Laparotomy was being performed for abdominal tuberculosis : 270 c.c. had been given and operation had just been begun when the respiration ceased. Slight cyanosis was observed. After artificial respiration had been carried on for a few minutes breathing was re-established and the operation was satisfactorily concluded without further trouble.

I have heard of other fatalities from the use of hedonal anæsthesia. Federoff,* the originator of the method, reports temporary cessation of respiration in 8 out of 530 cases.

Advantages.—For the patient hedonal is one of the most pleasant anæsthetics that we have. Its administration is practically free from discomfort. Children show alarm and pain in a more obvious manner than adults, and it was noticeable that the preliminaries to an operation under hedonal were always quieter than under any other anæs-

* Quoted by C. M. Page, 'Proc. Roy. Soc. Med.,' 1912, v, Section of Anæsthetics, p. 85.

thetic. One patient, after an experience of spinal, inhalation, and intra-venous anæsthesia, begged, when an anæsthetic was required on a fourth occasion, that intra-venous anæsthesia should be employed.

For the operator the conditions are all that could be desired. Excellent muscular relaxation is obtained. In operations about the head it is of advantage not to be hampered by the armamentarium of the anæsthetist. I have used the method on five occasions for operations on the brain and in each case the anæsthesia was most satisfactory. In the acute empyemas of children an inflammatory condition of the lungs is present to a greater or less extent, and an inhalation anæsthetic is practically always accompanied by coughing and straining. With hedonal the respiration is quiet and even throughout, and no explosive coughing occurs even when the chest is opened.

The after-results of the anæsthetic are excellent. The drug is excreted very slowly, and a quiet sleep for five to seven hours is usually obtained. On recovery the child is perfectly fit and ready to take food, but inclined to sleep for the next twenty-four hours. The absence of vomiting is a noticeable feature—five children of the series vomited and four of these only vomited once. The comparison of a ward on the day following operations after hedonal with one after chloroform or ether was most striking, and the testimony of the nursing staff was all in favour of hedonal anæsthesia.

The factors causing acetonuria after anæsthetics are at present rather the subject of considerable doubt, but the point is important in connection with delayed anæsthetic poisoning. The urines of these cases were examined before and after operation. The figures are too small to be of much value, but less than half showed any increase in acetone, and in 9 per cent. of the cases acetone was present before operation and absent afterwards. None of the cases gave any clinical signs of the presence of acetone. One case developed chorea fourteen days after operation, but there was no reason to suppose that the anæsthetic determined this. In fact no troubles that could be attributed to the anæsthetic occurred during the post-operative course.

The disadvantages of the method are by no means few. From my experience I do not think that hedonal can be called a safe anæsthetic. In its immediate effect it is probably as dangerous as chloroform and much more dangerous than open ether. Its late effects, however, compare very favourably with any other anæsthetic.

The estimation of the depth of anæsthesia is difficult to determine

exactly. The pupil and conjunctival reflexes are quite useless, and I have found that practically the only way one can determine when the patient is sufficiently under for the operation to be begun is by noting the reaction to skin stimuli. If the skin reflex is quite absent no more anæsthetic is necessary for some time and very little more will cause respiratory depression.

The slowness with which hedonal is excreted demands very careful administration. If by any unhappy accident an overdose were to be given resuscitation is almost a forlorn hope, because of the amount of the drug in the circulation and the slowness of its excretion.

As a routine anæsthetic the preliminaries of finding the vein and inserting the cannula may be rather tedious, and certainly take longer than induction with the open methods. There is also some uncertainty as regards the size of the vein, for though in a baby of 9 days I had no difficulty in inserting the cannula, in a child of 13 months both the saphenous and basilic veins were too small for the purpose.

The use of hedonal is contra-indicated in short operations, because of the slow recovery from the effects of the anæsthetic. It is contra-indicated in the ordinary hospital list of operations because of the extra time consumed and the excellent results that attend anæsthesia by open ether with the preliminary injection of morphia and atropine. For acute abdominal conditions in children, spinal anæsthesia with Tyrrell Gray's solution of stovaine-dextrin gives by far the best results. The indications for hedonal are therefore narrowed down to very few. It is, I think, the best anæsthetic for brain operations. Ether is here inadmissible because of the increased hæmorrhage, and prolonged chloroform anæsthesia should be avoided whenever possible in children. With hedonal the administration is convenient, and the prolonged sleep afterwards greatly reduces the shock of the operation. Moreover, a surprisingly small amount of anæsthetic is required.

The only experience I have had with it in chest surgery has been for empyemata and the results were excellent. I would not advocate its routine use in empyemata, because, except in infants, a rib can be resected easily and without distress and with complete safety to the patient with local infiltration anæsthesia. Hedonal appears to have no irritating effect on the lungs, and therefore it could be used with advantage in any case where the lung condition contra-indicated an inhalation anæsthetic.

Finally, hedonal should be considered if a patient has already

had experience of a general anæsthetic and dreads another operation on that account—a condition by no means infrequent in the case of older children. In conclusion, I must express my indebtedness to those members of the surgical staff at the Children's Hospital, Great Ormond Street, especially to Mr. Corner and Mr. Waugh, who allowed me to make use of the cases admitted under their care.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, November the 22nd, 1912.

Mr. A. H. Tubby, *President, in the Chair.*

Congenital Syphilitic Infant treated by Intra-venous Injection of Neo-salvarsan.—Dr. J. L. Bunch showed a girl, aged 2 years, who on admission to hospital was suffering from an offensive muco-purulent discharge from the nostrils, malnutrition, and well-marked condylomata round the anus. The Wassermann reaction had been markedly positive, and on October the 30th she was given a dose of 0·45 grm. neo-salvarsan intravenously into the median basilic vein. No ill-effects of any kind followed the injection. The child left the hospital two days afterwards with the syphilitic symptoms greatly improved, and a week afterwards the condylomata and muco-purulent rhinitis had disappeared.

On November the 13th a second injection of 0·45 grm. neo-salvarsan was given, this time intra-muscularly into the right buttock. The child had steadily improved in general health and had put on weight. The Wassermann reaction was negative.

Partial Hemiatrophy of the Face and Tongue.—Dr. Walter Carr showed a boy, aged 9 years. About a year ago the patient's mother first noticed a whitish spot, like a scar, over the lower border of the lower jaw on the right side. Since then a gradual wasting of the lower part of the right side of the face had been observed. No cause could be assigned for the onset of the atrophy; there was no history of illness or of trauma. When shown there was marked atrophy of the skin, subcutaneous tissues and muscles over and below the right half of the lower jaw, from the angle to the symphysis. The bone itself also appeared to be somewhat wasted, but an X ray examination did not show any definite atrophy. The skin showed slight, rather patchy atrophic changes; its sensibility was unaltered, except perhaps for a very slight diminution to touch. The muscles contracted normally; those of mastication were not affected. There was marked atrophy also of the right half of the tongue, but no affection of movement, ordinary sensibility, or taste. In all other respects, except for slight psoriasis, the boy seemed quite normal, both physically and mentally.

Spina Bifida (Meningo-myelocele) treated by Operation.—Mr. Lionel E. C. Norbury showed a girl, aged 5 weeks, who was admitted with an ulcerating sacral spina bifida, the size of a large tangerine orange. There was very little true skin over the swelling, the covering consisting chiefly of a thin membrane, discharging in several places. There was a slight degree of hydrocephalus; talipes calcaneus bilateral; no other paralysis. After the ulcers had healed an operation was performed under chloroform anæsthesia of excision of spina bifida by elliptical incisions. A rubber tube was stitched into the rectum to avoid soiling of the wound, but did not remain in position very long. The child was kept in a slanting position with the head low, until the wounds had healed. There was never any leakage of cerebro-spinal fluid during convalescence.

The child was sixteen months old when shown. She was intelligent. The anterior fontanelle was almost closed. There was no bulging in the region of the wound. The condition of talipes calcanous remained and was being treated by massage and passive movement by the mother.

Ununited Fracture of the Neck of the Femur.—Mr. H. A. T. Fairbank showed a girl, aged 15 years, who gave a history of having been run over by a van in October, 1904. The diagnosis was said to have been "comminuted fracture of femur near the neck." The left leg had always been short since the accident, which necessitated her lying in bed many weeks. The shortness was said to be increasing. Pain had been present at times only, but had been worse lately. The pain was severe at night; it waked her; it was particularly noticeable on rising after sitting for long, but it was not caused by walking except in wet weather. The left leg was wasted, and held in an everted position. Flexion of the hip was possible to a right angle only; abduction was practically abolished, while internal rotation was very limited; extension and adduction were only slightly limited. The trochanter was raised, prominent and thickened anteriorly. Real shortening, 2 in. A skiagram showed an ununited fracture of the neck of the femur and coxa vara.

The case was shown in order to elicit opinions as to the best treatment. It was proposed to excise the head of the femur, and retain the limb in hyper-abduction for several weeks.

Œsophageal Stricture.—Dr. Eric Pritchard and Mr. Douglas Drew showed a boy, aged 2 years, delicate from birth and subject to vomiting, who was admitted owing to inability to swallow solid food. He had been fed on liquid foods until recently, when inability to swallow solids was discovered. X-ray photograph showed a dilated œsophagus between the level of the supra-sternal notch and xiphisternum and a stenosed portion below.

Multiple Exostoses with Wasting of the Muscles of Upper Arm.—Dr. Eric Pritchard also showed a boy, aged 9 years. The first exostosis was noticed at the age of two years on the inner side of the upper end of the tibia. From that time until the present new exostoses had continued to develop, and were exceedingly numerous, especially in the ribs. For the most part they were symmetrical. There was considerable wasting of the muscles of the upper arm, but muscular power was good.

Osteoma of the Forearm causing considerable Deformity.—Mr. Sidney Boyd showed a boy, aged 9 years. The tumour of the forearm

appeared to be growing from the ulna, and had caused considerable bowing of the radius. It was first noticed at the age of five years. The head of the radius was dislocated outwards. There was imperfect ossification of the lower end of the ulna, and a small tumour at the upper end of the same bone. He had also several osteomata on the ribs, one at the upper end of the right humerus and one on the vertebral border of the left scapula. His father was said to have a bony tumour of the tibia. The patient was the ninth of eleven children. An elder brother, aged 19 years, had a similar but smaller tumour of the forearm; it was said to have become much smaller, and caused no loss of function. Another brother, aged 15 years, had a similar tumour, but it caused him very little inconvenience in his work as a typewriter. A sister, aged 6 years, also had multiple osteomata.

Cerebral Non-development.—Dr. G. A. SUTHERLAND showed a girl, aged 7 weeks. When two weeks old convulsions came on in the form of irregular twitchings of face and limbs. Difficulty in swallowing was noticed. The breathing at times was rapid.

The baby was fairly well nourished, the skull and other parts of the body appearing to be proportional in size. She lay in a completely apathetic condition, without smiling or taking any notice when awake, but could be roused to make certain gross movements of the trunk and limbs, although insensitive to pin-pricks. There was marked opisthotonos, with a tendency to left-sided pleurothotonos, and the limbs were in a spastic condition, flexion being present at the elbows and extension at the knees. The hands and feet were in a condition of tetany. Other symptoms: (1) As a rule unable to suck or swallow; (2) attacks of tachypnœa, the respirations running up to 160 per minute, and being cyclic in character; (3) attacks of tachycardia, the heart-rate running up to 200 per minute; (4) fits of crying, causeless, beginning and ending abruptly; (5) spells of yawning; (6) occasional twitching about the face and hands, but no definite convulsive seizure. Fundi normal. Wassermann test negative. Cerebro-spinal fluid scanty but normal; temperature normal.

It was suggested that the underlying condition was one of non-development of the cerebral lobes, and that only the cerebellum, pons, medulla and basal ganglia were active. The uncontrolled action of these lower centres would explain most of the symptoms present.

Malformation of the Rectum (Complete Absence of the Post-allantoic Gut and the Proctodæum); Operation; Result.—Mr. H. S. CLOGG showed a boy, aged 4½ years. When five days old he was admitted to the Evelina Hospital. The abdomen was greatly distended; vomiting was frequent. There was entire absence of development of the proctodæum, without any indication where the bowel terminated. Immediate colostomy in left iliac region was performed.

When he was six months old an exploratory operation was performed from the perinæal aspect. The bowel ended blindly at the level of the base of the prostate gland, to which it was adherent; it was separated from the prostate and sufficiently mobilised to enable it to be brought to the perinæal skin without tension, to which, after opening, it was sutured. To render access easier a portion of the coccyx was removed. In order to mobilise the bowel the peritoneum had to be freely incised, and several resistant peritoneal and connective-tissue bands had to be severed. The wound healed

satisfactorily without any retraction of the bowel; later the colostomy was closed.

When shown the bowel was seen to be united to the skin of the perinæum; there was no stenosis nor prolapse; the motions were passed unconsciously; there was complete absence of sphincteric control.

The case was shown to illustrate (1) the advantages of an immediate primary colostomy over a perinæal dissection in cases where the bowel ends at some distance from the perinæum, for a deep perinæal dissection in an infant a day or two old suffering from obstruction must be extremely difficult and probably fatal; (2) that in order to establish a perinæal anus the bowel must be freely mobilised and brought to the perinæal skin without tension, or very troublesome stenosis will result; and (3) the absence of sphincter control which is to be anticipated, since the sphincters are developed from the proctodæum. In this case there were a few fibres in the position of, and having the direction of, the external sphincter muscle, but as a muscle it could not be said to be developed.

Case for Diagnosis.—Dr. O. K. Williamson showed a boy, aged 10 years, who was brought to the Hospital in April, 1912, on account of tremor of the head. The illness began three and a half years before this, when it was noticed that his hands trembled and that he had lost strength in them. After this a fine tremor was noticed in the head. Since this time he had been, on the whole, less bright mentally. He got more easily excited than before, was spiteful and unsteady since the beginning of the illness, and he frequently fell. He had fits of bad temper. Since the beginning of the illness his sight had been affected and his gait unsteady. He improved for a time, but has been worse again of late.

There were coarse tremors of the arms, equal on the two sides, also of tongue; fine tremor of head; gait ataxic and reeling; he tended to fall to the left side; Romberg's sign absent; pupils reacted well to light and accommodation; hearing normal; doubtful slight lateral nystagmus; knee-jerks normal, no definite plantar reponse; speech was indistinct.

The following pathological specimens were shown:

Pharynx and Larynx from Fatal Case of Hæmorrhage from Throat.—Dr. J. D. Rolleston.—Girl, aged 6 years, was admitted to hospital on October the 22nd, certified to be suffering from diphtheria. She had had measles five weeks previously, since when her voice had been husky. On October the 20th she complained of sore throat, and on October the 22nd she had a croupy cough and her neck glands became swollen.

Condition on admission: Deposit on both tonsils and uvula, slight nasal discharge, voice husky, stridor, croupy cough and dysphagia. Temperature 100° F. Sixteen thousand units of antitoxin given.

October the 23rd: Deposit clearing away, leaving marked ulceration of tonsils and uvula. No fœtor. No Vincent's organisms in throat smear. Temperature 103·2° to 100° F.

October the 25th: Sudden and profuse hæmorrhage from throat, cyanosis, and death within five minutes. No diphtheria bacilli, but only cocci, were found in three successive cultures from throat and one from nose.

Specimen shows abscess cavity in each tonsil, ulceration of the uvula, soft palate, epiglottis, frænum epiglottidis, valleculæ, and aryepiglottidean folds. Deep ulceration of the laryngeal portion of pharynx exposing

muscular tissue. Three small superficial ulcers above right vocal cord. Exact site of bleeding vessel not determined, but no evidence of erosion of carotid or internal jugular, or of any glandular abscess.

Primary Carcinoma of the Liver in a Boy, aged 6 years.—Dr. C. Paget Lapage showed a liver which was considerably enlarged, with several rounded prominences on its anterior surface. The marked and progressive engorgement of the abdominal veins and the ascites showed that there was obstruction to the venous return in the region of the liver. There was no jaundice. The post-mortem examination showed that the liver was very large, weighing six pounds, the right lobe being chiefly affected by large masses of tumour, which were also growing into and obstructing the hepatic veins and inferior vena cava; there were secondary deposits in the lungs, but nowhere else. Microscopical examination of the tumour showed polygonal and spheroidal cells in masses and columns, with very little stroma; the cell nuclei were oval or rounded and showed many mitotic figures, and the cytoplasm was granular; there was much fatty infiltration.

There were bile-stained areas in the tumour masses and in the lung deposits, but not in the liver itself.

The evidence for regarding this tumour as a primary carcinoma of the liver was two-fold, viz. (1) the general resemblance of the cells to liver-cells in form and arrangement, and (2) the resemblance in physiological function, as shown by the infiltration of fat and secretion of bile in both primary and secondary growths.

Epidemic Catarrhal Jaundice.—Dr. Leonard Guthrie (*vide* p. 1).

Société de Pédiatrie, Paris.

October the 15th, 1912. (*Bulletin No.* 7.)

Vincent's Angina.—MM. Hallé and Jacquet showed a boy, aged 3 years, with pseudo-membranous ulceration of the pharynx simulating diphtheria, the membrane extending to the uvula. The subsequent evolution of the lesions and the absence of Loeffler's bacillus showed the true nature of the case.

Congenital Malformation of the Heart and Large Vessels.—M. Sedillot showed a boy, born on April the 30th, 1912, with marked cyanosis, increased on crying or feeding. There was a systolic bruit at the level of the pulmonary artery, short, loud, and localised. Autopsy showed transposition of the aorta and pulmonary artery.

Congenital Icterus due to Malformation of the Bile-ducts.—MM. Zuber and Rousselot showed a girl born with marked jaundice, who survived birth four days. There was complete absence of the last part of the common duct and its opening into the duodenum.

Congenital Dilatation of the Small Intestine by Fibrous Bands.—M. Rousselot showed the small intestine of a child, aged 2 months, who

died with symptoms of hypothermia, wasting, vomiting, and diarrhœa. There was a loop of intestine immensely dilated by two fibrous bands arising, one from the anterior surface of the abdominal wall in the neighbourhood of the umbilicus, the other from the peritoneum in the iliac fossa.

Rectal Absorption of "606" by Children.—MM. Weill, Morel and Mouriquand read a paper on this method, in which they affirmed that the arseno-aromatics are easily absorbed by the rectum, that this absorption causes marked improvement in cases of hereditary syphilis and severe chorea, and that except in cases of urgency this should be the method of choice.

Somnolent Form of Azotæmia in Infants: Its Diagnosis from Tuberculous Meningitis.—MM. Nobécourt and Maillet read a paper based on thirty-nine cases, two of which they publish in detail, showing the difficulties of diagnosis. Examination of the cerebro-spinal fluid, which showed a large proportion of urea (0·80 grm. to 2·50 grm. per litre) and a small quantity of lymphocytes, was insisted upon as giving a clear indication.

Case of Infantile Diabetes.—M. Merklen related the case of a boy, aged 8 years, who, had suffered from this affection for probably two years. A table was given showing the quantity of acetone and diacetic acid secreted during the time he was under observation; these quantities were very small. Death by coma.

Sublingual Tumour and Barlow's Disease.—M. Weill Hallé showed a child, who, besides having a sublingual tumour (Riga's disease), developed marked symptoms of Barlow's disease supervening on whooping-cough.

Case of Pneumothorax.—M. Jules Renault related the case of a boy who had pleurisy, following pneumonia with pneumothorax. On succussion there was no result, but movements of flexion of the trunk or the thighs produced a marked amphoric bubble (*bruit de glouglou*).

Enlarged Thymus treated by X Rays.—M. Weill showed a series of photographs, which demonstrated the shrinkage in the thymic shadow under the influence of X rays. In one case of suffocation and dyspnœa the urgent symptoms yielded rapidly to the application of X rays, which had been used for diagnostic purposes.

Pneumonia complicated by Pleurisy and Pericarditis.—M. Raoul Duthoit reported a case in a boy, aged 7 months, in which Cohen's bacillus was the principal organism found, and also a case of epidemic cerebro-spinal meningitis in a boy, aged 4 years, cured by serum therapy.

Thymectomy.—MM. Lévy and Pellot reported a case in a child, aged 9 months, in which the thymus weighed 33 grm. (normal weight at that age 15 grm.). Death from broncho-pneumonia twenty-four hours after the operation.

Vincent Dickinson.

Abstracts from Current Literature.

Medicine.

Diphtheria in the Metropolitan Asylums Board hospitals (*'M. A. B. Rep.,'* 1911).—5034 cases were admitted during 1911 as compared with 3634 during 1910 (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, IX, *p.* 30). Exclusive of purely bacteriological cases the percentage mortality was 8·5. The mortality at the various hospitals ranged from 7·4 to 10·8 per cent. Among 862 laryngeal cases there were 135 deaths, a mortality of 15·6 per cent. On 297 tracheotomy, on 56 intubation and on 20 both operations were performed, among whom were 81, 4 and 14 deaths respectively. The percentage error in cases admitted was 12·7. Among the 753 wrongly certified as diphtheria were 485 of tonsillitis, 47 of laryngitis and 22 of broncho-pneumonia; 24 had no obvious disease or were not diagnosed. Of complications paralysis occurred in 11·5 per cent., albuminuria in 12·5 per cent., and otitis in 5·3 per cent. Serum rashes were noted in 30·6 per cent., joint pains in 5·1 per cent., and abscesses at the injection site in 0·4 per cent.

J. D. ROLLESTON.

Malignant diphtheria (*'Thèses de Paris,'* 1911–12, *No.* 298).—**E. Verdoux** records sixteen cases treated at the Hôpital Bretonneau in children aged from one to eleven years, ten of whom died. Cases were most prevalent in large families in which the children received little attention. Late and inadequate doses of serum were partly responsible for the high mortality. The gravity of the cases was due to diphtheritic intoxication and not to association with other microbes. In a large number death occurred early, before the throat had become clear or even before the membrane had begun to loosen, and was usually preceded by one or more of the following signs: vomiting, precocious paralysis of the palate, and abundant albuminuria. In several cases death occurred while the throat was being syringed. The symptoms were due to bulbar intoxication in the first place and possibly also to suprarenal insufficiency. As treatment large and early doses of serum are recommended associated with suprarenal opotherapy.

J. D. ROLLESTON.

Wound diphtheria complicated by paresis of accommodation and myocarditis (*'Hospitalstidende,'* 1912, LV, *p.* 669).—**C. Saggau.**—A girl, aged 12 years, ran a splinter into her foot in the middle of January. At Saggau's visit on the 31st there was an ulcer 4 cm. long by 2 cm. broad on the side of the foot covered by a yellowish exudation. There was a profuse discharge of pus from the ulcer and the loosened epidermis. The wound slowly cleared up under local treatment, but sometime between February 24 and March 3 the child found that she could neither read nor write. In addition to paresis of accommodation the heart was found to be dilated and the pulse rapid, small and irregular. The ocular palsy lasted for about three weeks and cleared up without treatment, and the cardiac condition lasted for a few weeks longer. No bacteriological examination was made, as diphtheria was not diagnosed until after the onset of paralysis, when the wound had healed.

J. D. ROLLESTON.

Blood-pressure in diphtheria (*'Inaugural-Dissertation, Berlin,'* 1912). —**W. Cobliner** examined with Deneke's modification of Riva-Rocci's sphygmomanometer 138 diphtheria patients, whose ages ranged from fifteen to fifty-three years. His conclusions, which differ from those of Weigert Brückner and the abstracter (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, VIII, *p.* 433) are as follows: (1) In a large number of severe cases there was a deep and persistent fall of blood-pressure. These cases almost always had complications subsequently, and not seldom ended fatally. (2) Fall of blood-pressure after subsidence of the acute symptoms was in many cases the first sign of a persistent intoxication, and had therefore a prognostic significance. (3) Fall of blood-pressure was very frequently followed by severe cardiac disturbance. (4) The question whether serum has a favourable influence on the blood-pressure was not decided.

J. D. ROLLESTON.

A fatal case of anaphylaxis (*'Münch. med. Woch.,'* 1912, LIX, *p.* 198). —**J. Dreyfuss** records a case in a boy, aged 7 years, suffering from moderately severe diphtheria, who one year previously had received a prophylactic injection of 150 units of diphtheria antitoxin. In one and a half to two minutes after the second injection the child complained of itching in the legs and trunk, and this was rapidly followed by vomiting, clonic convulsions of the limbs, loss of radial pulse, dilated pupils and unconsciousness. No necropsy. Dreyfuss recommends that in cases that have been previously injected the serum of a different animal should be employed.

J. D. ROLLESTON.

Serum-therapy and diphtheritic paralysis (*'Riv. di clin. Ped.,'* 1912, X, *p.* 265).—**U. Calcaterra** records some interesting observations at the Pædiatric Clinique at Bologna. In 61 cases injected on the first day of disease the percentage of paralysis cases was 1·6, in 377 second-day cases it was 9·5, among 257 third-day cases 16·3, among 101 fourth-day cases 21·7, in 52 fifth-day cases 15·3, in 19 sixth-day cases 26·4, and in 13 seventh-day cases 15·3. Large doses of serum, though they did not always succeed in preventing paralysis, considerably diminished their gravity. A bivalent serum, *i. e.* one with antitoxic and bactericidal properties, did not possess in this respect any advantage over ordinary antitoxin. Twenty-two cases received intra-spinal injections as well as subcutaneous. This new method did not prevent the appearance of generalised paralysis or appear to render it less severe (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, VIII, *p.* 380). Two of the cases so treated showed signs of transient meningeal irritation, revealed by headache, vomiting, nuchal rigidity and Kernig's sign. Ten cases of diphtheritic paralysis were treated with subcutaneous injections of serum. Almost all showed signs of anaphylaxis, and none showed any improvement that could be attributed to the serum. Calcaterra agrees with Mya that serum-therapy in diphtheritic paralysis is useless.

J. D. ROLLESTON.

The action of Staphylococcus aureus on the Klebs-Loeffler bacillus (*'Journ. Infec. Dis.,'* 1912, X, *p.* 24).—**Lydia M. DeWitt** in a series of 175 cases of diphtheria found that the duration of the Klebs-Loeffler bacilli was less than thirty days in 63 per cent., between fifteen and thirty-five days in 87 per cent., under fifteen days in only 12 per cent., and over forty days in 12 per cent. The recent work on the treatment of diph-

theria carriers with a staphylococcus spray (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, IX, pp. 33 *and* 322) induced her to carry out experiments to determine whether an antagonism existed between *Staphylococcus aureus* and Klebs-Loeffler bacilli. Test-tube experiments showed that the organisms grew well together, and that a killed staphylococcus culture formed a good medium for the growth of diphtheria bacilli. Experiments on rabbits and guinea-pigs showed that though Klebs-Loeffler bacilli frequently disappeared more quickly in animals treated with staphylococcus cultures than in those untreated, this result was not constant, and the clinical symptoms were often more severe under staphylococcus treatment. In 28 per cent. the diphtheria bacilli persisted longer in the treated than in the untreated cases. In two diphtheria patients in whom she employed the treatment, diphtheria bacilli reappeared after two negative cultures had been obtained. The writer suggests that the apparently favourable action of *Staphylococcus aureus* is due, not to an incompatibility between the two organisms, but to the reinforcement of the normal throat flora.

J. D. ROLLESTON.

The use of Staphylococcus pyogenes aureus cultures in a diphtheria outbreak (*'Med. Record,'* 1912, I, *p.* 1228).—**G. B. Lake** employed this method in thirteen cases (*v.* BRITISH JOURNAL OF CHILDREN'S DISEASES 1912, IX, *pp.* 33 and 322). The throats were swabbed once a day with the cultures, which were varied a good deal for purposes of experiment. Bouillon cultures from six hours to five days old, young broth cultures reinforced with two or three loopfuls of agar, cultures suspensions in broth of agar cultures from one to seven days old were all tried. The best results were obtained with bouillon cultures forty-eight to seventy-two hours old grown at incubation temperature.

J. D. ROLLESTON.

Treatment of diphtheria carriers by over-riding with Staphylococcus aureus (*'Journ. Amer. Med. Assoc.,'* 1912, LIX, *p.* 690).—**W. F. Lorenz** and **M. P. Ravenel** employed this treatment with success in seventeen cases. A nasal and throat spray was used four-hourly for two successive days, consisting of a fresh suspension of *Staphylococcus aureus* in normal saline solution and a broth culture twelve hours old, and then a bacteriological examination was made. No complications due to staphylococcus infection occurred beyond coryza, very mild laryngitis and nasal furuncles.

J. D. ROLLESTON.

Scarlet fever in the Metropolitan Asylums Board Hospitals (*'M.A.B. Rep.,'* 1911). — 8818 cases were admitted in 1911 as compared with 8782 in 1910 (*v.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1912, IX, *p.* 33). The mortality was 1·9 per cent. The percentage error of diagnosis was 8·7. Among the 843 wrongly certified as scarlet fever were 182 of German measles, 140 of tonsillitis, and 201 of erythema; 137 had no obvious disease or were not diagnosed. The commonest complications were otitis (11·42 per cent.), albuminuria (7·4 per cent.), secondary adenitis (6·3 per cent.), nephritis (3·85 per cent.), and rheumatism (3·80 per cent.); 255, or 3·02 per cent., had relapses. There were 119 cases of post-scarlatinal diphtheria with 1 death—a mortality of 0·8 per cent. Nine of the post-scarlatinal cases were laryngeal, among them being the single fatal case.

J. D. ROLLESTON.

Scarlet fever (*'Journ. Amer. Med. Assoc.,'* 1912, LIX, *p.* 1528).—**K. K. Koessler,** in a review of the ætiology of scarlet fever, acknowledges that the streptococcus has an intimate biological and clinical relation to the disease. This has been proved by (1) the constant presence of the streptococcus in large numbers in the throat and on the tonsils; (2) the frequency with which it is found in the blood during life and in most of the organs after death; (3) the fact that by far the greater majority of complications in the disease and of deaths in scarlet fever are to be attributed to the invasion of this microbe, and (4) the evidence of systemic reaction to the streptococcus by the presence of antibodies in the blood. The author's researches, however, with the complement-deviation method, using an appropriate antigen, have led him to the conclusion that the streptococcus must be discarded as the ætiological factor of scarlet fever. He finds that the serum of scarlet-fever patients contains specific antibodies for an unknown virus, and that this virus seems to be present especially in the cervical lymphatic glands. The experimental transmission of scarlet fever to apes and monkeys also substantiates this statement. T. R. WHIPHAM.

A rare complication in scarlet fever (*'St. Petersburg. med. Zeitschr.,'* 1912, XXXVII, *p.* 263).—**T. Hecker** records a fatal case of scarlet fever in a child, aged $2\frac{1}{2}$ years. On the third day the condition was so critical that, after consultation, an injection of scarlet serum was given. Great improvement set in, although the submaxillary glands swelled and gave some uneasiness; a few days later erythema multiforme broke out, which was attributed to the serum. On the fifteenth day there was a violent hæmorrhage from the mouth with vomiting, which was presently repeated. The collapse was treated, and was succeeded by several days of high temperature and severe illness. A subcutaneous abscess formed in the lumbar region; another in the right inguinal region. The left foot became swollen and red, and the child died on the twenty-second day of the illness. The autopsy showed a gangrenous excavation of the sinus pyriformis, enlargement of the spleen and liver, and acute purulent peritonitis. Hecker concludes with a brief account of hæmorrhage in scarlet fever. M. D. EDER.

Secondary eruption in scarlatina (*'La clin. inf.,'* 1912, X, *p.* 243).—**H. Rouèche,** in his *'Thèse de Paris,'* 1911, says that during the convalescence of scarlatina, long after the primary eruption, cases may be observed of scarlatiniform eruptions with prodromal phenomena, fever, and bucco-pharyngeal symptoms of the same appearance as in the original attack. These eruptions occur late, from the fiftieth to seventieth day on an average, and must be considered to be late relapses or early secondary attacks. They are especially seen in certain years in which epidemics of scarlatina are benign and almost always where cases are collected together. The symptoms are those of the original attack, and follow in the same order but in a milder form. The throat and tongue are invariably affected. Desquamation is usually branny. Fresh attacks of scarlatina are distinguished by the changes in the tongue and throat from later infections, erythemata and simple scarlatiniform exanthemata, which occur during convalescence, and which, on account of their other symptoms, suggest a fresh attack of scarlatina. These relapses or second attacks occur in patients who have not acquired complete immunity. The influence of an increased virulence of the original micro-organism seems probable, or the cases may be explained by latent microbism, or by scarlatina carriers. Preventive treatment consists in minute disinfection of the bucco-

pharyngeal cavity in all cases of scarlatina throughout the whole duration of convalescence, remembering that the eruption is unimportant, but "the throat and tongue everything." VINCENT DICKINSON.

Scarlatinal suprarenalitis and pancreatitis (*'Arch. de méd. des enf.,'* 1912, xv, *p.* 321).—**L. Tixier** and **J. Troisier** were the first to show that the pancreas might be considerably affected in scarlet fever (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1910, vol. VII, p. 410), and now record ten cases illustrating involvement of the suprarenals and pancreas in children, aged from three to eleven years, four of whom died. The symptoms of suprarenal involvement in scarlet fever are tachycardia, arterial hypotension, asthenia, epigastric pain, gastro-intestinal disturbance and melanodermia. Except in cases of suprarenal hæmorrhage no macroscopic changes as a rule are seen post mortem, but histological examination shows that these glands are profoundly affected. The lesions are chiefly confined to the cortex, and consist of degenerative and hæmorrhagic lesions with disappearance of the normal lipoids. The symptoms of scarlatinal pancreatitis are not always definite, but are sometimes manifested by acute abdominal pain, most intense in the epigastrium, and lasting on the average three to five days, by intense and rapid emaciation, and by copious ill-digested and fœtid stools. The anatomical lesions of scarlatinal pancreatitis are interstitial and degenerative. The acini are much more often and profoundly affected than the islands of Langerhans. Contrary to what is observed in the suprarenals, diapedesis is well marked. As treatment suprarenal opotherapy, either by adrenalin or suprarenal extract, is recommended. J. D. ROLLESTON.

Measles in the Metropolitan Asylums Board hospitals (*'M.A.B. Rep.,'* 1911).—1537 cases were admitted during 1911, which was the first year in which this disease was admitted to these hospitals. The mortality was 13·9 per cent. This high rate was due to admission being confined to children of the poorest class, and to urgent and necessitous cases recommended by the medical officers of health. Among 318 wrongly certified were 219 of German measles, 27 of erythema, and 21 with no obvious disease. The commonest complications were broncho-pneumonia (17·7 per cent.), otitis (14·10 per cent.), albuminuria (3·9 per cent.), whooping-cough (3·4 per cent.), and diphtheria (1·8 per cent.). J. D. ROLLESTON.

Prodromal rashes in measles (*'Journ. de méd. de Paris,'* 1912, XXXII, *p.* 635).—**H. Rouèche** records seven cases in which the eruption of measles occurred in two successive stages. Three of the children were convalescent from scarlatina and one from whooping-cough. The first eruption, which was associated with catarrhal signs and rise of temperature, was very incomplete, irregular in distribution, and morbilliform, and was followed three or four days later by the characteristic eruption of measles. In only one case were Koplik's spots present. All the cases were mild, the prodromal rashes in no way altering the course or prognosis of the disease.

J. D. ROLLESTON.

Three cases of noma studied bacteriologically (*'Bull et mém. Soc. med. Hôp. de Paris,'* 1912, XXXIV, *p.* 70).—**A. Zuber** and **P. Petit** record three fatal cases following measles in children aged from two to seven years. In the fluid taken from the lesions during life and in sections of the peripheral zone of the gangrenous area the fusiform bacilli and spirilla of

Vincent exclusively predominated. The organisms could not be cultivated and studied experimentally. Local applications of "606" in one case and an intra-muscular injection in another were used without effect.

J. D. ROLLESTON.

Salvarsan and measles (*'Compt. rend. Soc. de Biol.,'* 1912, LXXII, *p.* 525).—**A. B. Marfan** and **L. Lagana.**—A boy, aged 7 years, who had had syphilitic epiphysitis when six weeks old, was admitted to hospital with gummata of the palate. On March 2 he was given an intra-venous injection of "606," 10 cgm., and on the 11th a second injection of 15 cgm. On the 15th he had fever and catarrh and on the 18th a typical measles rash. The injections had thus had no influence on the development of measles. A similar case is recorded by **L. L. Williams** (*'Boston Med. and Surg. Journ.,'* 1912, I, *p.* 738) in a man, aged 22 years, who was given an intra-venous injection of 0·6 grm. on March 31. On April 1 he had typical coryza, and on the 2nd a typical measles rash. J. D. ROLLESTON.

Symmetrical osteomyelitis after smallpox (*'Arch. f. Kinderheilk.,'* 1912, LVIII, *p.* 12).—**C. Schwenk** records a case of a girl, aged 14 years, vaccinated in infancy, who five weeks after smallpox developed swelling and pain of the right, and three days later of the left shoulder. Incision gave issue to a large quantity of pus. X rays showed disease of the acromion on each side. Complete recovery followed removal of sequestra. The symmetrical occurrence of osteomyelitis is very rare. Schwenk records six other cases, three of which occurred after typhoid and one after smallpox, in which both clavicles, humeri, and radii were affected.

J. D. ROLLESTON.

Vaccination in the course of infectious diseases (*'Giorn. internaz. d. Sci. med.,'* 1912, XXXIV, *p.* 817).—**A. Montefusco.**—During a smallpox epidemic at Naples that lasted several years more than 4000 patients in the Cotugno Hospital suffering from various infectious diseases were vaccinated or re-vaccinated. Unlike Jezierski (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1908, V, *p.* 311), Montefusco did not see a single bad effect result from vaccination. The disease pursued its ordinary course, the complications were not more frequent, and the mortality percentage for several diseases was even lower than in previous years. The various infectious diseases had no effect on the development of the vaccine pustule.

J. D. ROLLESTON.

Delayed appearance of vaccination pustules in measles (*'Monatsschr. f. Kinderheilk.,'* 1912, XI, *p.* 222).—**K. Neumark.**—A child, aged 2 years, was vaccinated during the incubation stage of measles. No reaction was seen on the fifth day, the date of appearance of the measles eruption, nor on the seventh. On the eleventh day two of the four pustules showed a definite reaction corresponding to the condition usually found on the sixth or seventh day. The further development of the pustules was normal.

J. D. ROLLESTON.

Fatal generalised vaccinia (*'Ann. de méd. et chir. inf.,'* 1912, XVI, *p.* 225).—**L. d'Astros** describes the case of a child vaccinated on the fifth day after birth, in whom some days afterwards the signs of vaccination were made more manifest by the formation of new pustules on a hard, red base.

A fortnight later pustules appeared over nearly the whole body, and the child died six weeks after vaccination with hæmorrhage into the pustules and from the mouth and anus. F. R. B. Atkinson.

Bullous dermatitis following vaccinia (*'Med. Record,'* 1912, II, *p.* 290).—**J. L. Kirby-Smith** reports a case in a boy, aged 9 years, in whom ten days after vaccination clear blisters appeared in the neighbourhood of the vaccine pustules, followed a few days later by similar lesions on the body and then on the face. During the next eighteen months there were frequent recurrences, the longest period of intermission being two months. At the time of writing the patient had been free from the eruption five weeks. J. D. Rolleston.

Whooping-cough in the Metropolitan Asylums Board hospitals (*'M.A.B. Rep.,'* 1911).—570 cases were admitted in 1911, which was the first year in which this disease was admitted to these hospitals. Only poor children were admissible. The mortality was 12·1 per cent. Among thirty-seven wrongly certified were twelve cases of bronchitis and five of broncho-pneumonia; thirteen had no obvious disease. The commonest complications were broncho-pneumonia (15·2 per cent.), otitis (4·9 per cent.), albuminuria (3·1 per cent.), German measles (5·5 per cent.), and measles (2·2 per cent.). J. D. Rolleston.

Prolonged epidemic cerebro-spinal meningitis (*'Thèses de Paris,'* 1911–12, *No.* 453).—**Mlle. R. Auchère.**—Prior to the introduction of the serum treatment prolonged cases were relatively frequent, whereas at present four fifths of the cases last less than six days. The chronic form seems to be due to the inflammatory process becoming encysted, especially in the neighbourhood of the base of the brain and the ventricles. It resists serotherapy, and usually terminates either by death or by leaving grave sequelæ, *e. g.* hydrocephalus, deafness, blindness, or paralysis. Recovery sometimes follows trephining. The thesis contains the histories of nine cases, the following two of which are original: (1) Male child, aged 5 months. Death on twenty-seventh day of disease, in spite of intra-spinal injection of 75 c.c. of serum. (2) Female child, aged 20 months. Duration of disease thirty-five days. No hypertension. Recovery after injection of 220 c.c. of serum (*cf.* British Journal of Children's Diseases, 1911, VIII, *p.* 82, and 1912, IX, *pp.* 30 and 169). J. D. Rolleston.

A virulent case of epidemic cerebro-spinal meningitis; 420 c.c. of serum administered; recovery (*'Journ. Amer. Med. Assoc.,'* 1912, LIX, *p.* 444).—**A. A. Herold.**—The patient was a boy, aged 17 years. He was discharged recovered one month after the onset, considerably emaciated, having lost 40 lb., but with no sequelæ. The case is remarkable for the unusual amount of serum given and the complete recovery in spite of the almost hopeless condition at several different periods of the disease.
J. D. Rolleston.

Koplik's spots in mumps (*'Journ. de méd. de Paris,'* 1912, XXXII, *p.* 759).—**Weill** and **Gardère** state that Koplik's spots are seen in other conditions than measles, such as diphtheria, whooping-cough, tonsillitis, chickenpox, etc. They quote three cases of children suffering from mumps who had had measles previously and who showed Koplik's spots.
J. Porter Parkinson.

Pancreatitis in mumps (*'Paris méd.,'* 1911–12, II, *p.* 240).—**V. Raymond** found pancreatitis present in four out of sixty cases in a severe epidemic of mumps. It was more frequent in adults than in children. It usually occurred between the third and sixth days, and lasted two to five days. The symptoms are classified as follows: (1) Symptoms due to compression of the surrounding structures and especially the abdominal sympathetic plexuses by the hyperæmic pancreas, and consisting in pain, tenderness on palpation, nausea and vomiting, constipation and diarrhœa. Pain on pressure over the ampulla of Vater is almost pathognomonic. This point is found by drawing a vertical and a horizontal line at the level of the umbilicus and bisecting the angle thus formed. The area enclosed between the bisecting line and the vertical line indicates the position of the ampulla. (2) Symptoms indicating infection, viz. fever, herpes, profuse sweating and rapid pulse. (3) Glandular symptoms, consisting in disturbance of the internal or external secretions of the pancreas. Hitherto these have not been noted. The prognosis is good. Only one fatal case has been recorded. Treatment consists in the application of hot fomentations or an ice-bag to the epigastrium. In some cases morphia may be needed.

J. D. Rolleston.

Pancreatitis in mumps (*'Semaine méd.,'* 1912, XXXII, *p.* 85).—**L. Cheinisse,** in a critical review, shows that though the existence of this complication is an undoubted fact, some of the cases so described were really instances of gastritis, which is apt to occur in infectious disease (*vide 'Sem. méd.,'* 1911, XXXI, *p.* 409). As a rule the complication is of short duration and of good prognosis, but there are two cases on record of diabetes having developed shortly after an attack of mumps.

J. D. Rolleston.

Mumps followed by orchitis in a retained testicle (*'Med. Press and Circ.,'* 1912, II, *p.* 164).—**S. J. Ross.**—A boy, aged 14 years, on the eleventh day of mumps complained of severe pain in the right inguinal region. The right half of the scrotum and right inguinal canal were empty. As the pain continued for a fortnight operation was performed, and the testis was found just at the internal abdominal ring. On removal it was found to be very poorly developed and to show typical signs of inflammation.

J. D. Rolleston.

Tetanus as a complication of burns (*'Amer. Journ. Dis. Child.,'* 1912, IV, *p.* 35).—**C. Newberger** records two cases in girls, aged 5 and 6 years respectively, in whom tetanus set in on the eighth day after the burn, and proved fatal in spite of antitoxin about twenty-six hours after its appearance Sixty-seven other cases are reported in literature, forty-seven of which are tabulated in this paper. Newberger's conclusions are as follows: (1) Tetanus is a not infrequent complication of burns. (2) The mortality is greater in cases occurring in the warmer months of the year. (3) Tetanus complicating burns of the trunk is more serious than when the burn is on other parts of the body. (4) The longer the incubation period the less the mortality. (5) The greatest number of fatalities occurs early in the complication. (6) The prophylactic injection of tetanus antitoxin is advisable in all cases of serious burns.

J. D. Rolleston.

Pneumococcal vulvo-vaginitis (*'Lancet,'* 1912, I, *p.* 1685).—**H. Chapple** records two cases clinically indistinguishable from other varieties of vulvo-

vaginitis in girls, aged 13 and 11 years. In both the pneumococcus was present in direct smears and in cultures. The elder child was seen once only; in the younger child four injections of an autogenous vaccine of 5 million pneumococci was followed by rapid recovery. J. D. Rolleston.

Typhoid fever in children (*'Wien. klin. Rundschau,'* 1912, xxvi, *pp.* 273, 292).—**Zarchi,** in a brief historical *resumé*, remarks that whereas it was formerly held that typhoid was infrequent in children, and that generally the milder forms were the commonest, the prevalent view is that it is relatively common, and not severe forms of the disease are quite frequent. A small epidemic in Freiburg in the spring of 1910 confirmed this opinion. There were thirteen cases aged 1–15 years (very evenly distributed from the first year), ten cases aged 16–30 years, and six cases over 30 years. The epidemic was traced to the milk supplied by one dealer. The mortality among the children was 10·5 per cent., among the adults 25 per cent. Five of the children had intestinal hæmorrhage. In the symptomatology Zarchi points out the frequency in children of vomiting; out of the thirteen patients three children vomited during the early days, and two throughout. All had bronchial catarrh. Rose-spots were only absent in two children (one of them was not seen till fourteen days after the illness began). In nearly all cases a maximum temperature of 40° C. was reached; the spleen was found to be enlarged by percussion in one case, and palpation in all the others. The Gruber-Widal reaction was positive in every case. Leucocytic counts in six cases were as follows: Leucopenia in one case, in two others no diminution, and in three the following variations were found: (1) 6650–26,700; (2) 6606–11,700; (3) 6180–9000. Severe nervous symptoms were present in 30 per cent. of the cases; there were five relapses and no serious complications. M. D. Eder.

Typhoid fever in children (*'Journ. de méd. de Paris,'* 1912, xxxii, *p.* 434).—**Depasse** describes four cases in which the fever occurred suddenly, but there was little increase in the pulse-rate, and believes that such a condition often permits of the diagnosis of typhoid fever.

F. R. B. Atkinson.

Manifestations and treatment of typhoid fever in children (*'Ind. Med. Rec.,'* 1912, xxxii, *p.* 151).—**F. C. Neff.**—Fœtal typhoid is possible, or the child may be born at term with positive Widal's reaction, possessing an immunity acquired from the mother's blood. The younger the individual the more apt is the disease to be a septicæmia without much localisation in the abdomen. The symptoms are often so slight that the child may seem to be normal and not capable of transmitting the disease. Initial chills and other early symptoms are not often seen. It may begin acutely and reach its maximum in a few days, or gradually, when the child loses colour and strength, with increasing fever and somewhat constipated bowels. The first form is most common in younger children and may resemble a pneumonia. There may be no pain at first, even with perforation. Abdominal distension and meteorism are not so common in children, and rose spots, according to Marfan, are absent in one third of the cases. Markedly coated tongue is absent. Perforation is rare under five years. A hypo-leucocytosis is characteristic. In older children the mortality is lower than in adults. *Treatment.*—For every pound weight the child should have daily—milk, 2½ oz.; sugar,

$1\frac{1}{4}$–$2\frac{1}{2}$ drm; raw egg, one half; cereal gruel, 1–$1\frac{1}{4}$ oz. In every case a vaccine should be given every four or five days as long as the temperature is high.

F. R. B. Atkinson.

Two cases of pneumo-typhoid (*'Ann. de méd. et chir. inf.,'* 1912, xvi, *p.* 602).—**Cassoute** relates two cases. The first was in a child aged 9 years, who suffered from ordinary typhoid, the temperature falling on the twenty-first day with a large intestinal hæmorrhage. Three days later the temperature rose with signs of pneumonia in the lower lobe of the right lung; the signs and fever persisted for ten days, and then convalescence began. The second case was in a child, aged 5 years, who had been ill two days before admission to hospital with signs of pneumonia in the left axilla. There were no signs of typhoid. The temperature fell on the eighth day to subnormal, but rose two days later, oscillating daily for another five days. The serum reaction was positive, but there was no other sign of typhoid fever. The author insists on the apparent gravity of these cases, but the gravity is only apparent, for the prognosis is generally good.

J. Porter Parkinson.

Adenitis in typhoid fever (*'Journ. de méd. de Bordeaux,'* 1911, xlii, *p.* 249).—**L. Verdelet** records two cases of this rare complication. (1) Child, aged 2 years. Suppurative adenitis of the right epitrochlear glands in convalescence. Pus contained staphylococci. The probable portal of entry was a small wound on the thumb. Complete recovery after curetting. (2) Girl, aged 9 years. Severe typhoid with relapses. In convalescence adenitis of right epitrochlear glands. Resolution without suppuration. The typhoid bacillus was the probable cause of the adenitis in this case.

J. D. Rolleston.

Gangrene of the skin in typhoid fever (*'Thèses de Paris,'* 1911–12, *No.* 262).—**A. P. C. Rouhaud.**—This is a rare condition, and met with almost exclusively in the second period of childhood. It is most frequently seen in debilitated subjects, and therefore is chiefly found in the adynamic and ataxo-adynamic forms of typhoid fever. It is most likely to occur when there has been some pre-existing skin-lesion, such as impetigo, but it may be primary. The prognosis is grave, especially in young children, death being due to septicæmia or complications, *e. g.* broncho-pneumonia, myocarditis, peritonitis, or meningitis. The *Staphylococcus pyogenes aureus* is the organism most frequently found in the lesions. The thesis contains the histories of four fatal cases in children, aged from three to thirteen years, one of which is original.

J. D. Rolleston.

Typhoid spine in a child (*'Progrès méd.,'* 1911, 3 *sér.*, xxvii, *p.* 385).—**Ardin-Deltheil** and **M. Coudray** report the first case published in France in a boy, aged 12 years. The attack of typhoid fever was severe and was complicated by myocarditis and multiple abscesses. The temperature became normal on the fiftieth day. Seven days later he had a sudden attack of severe pain in the right lumbar region, radiating into the thigh and leg and accompanied by a rise of temperature at first suggestive of a relapse. Movement of the vertebral column became impossible and scoliosis subsequently developed. Gradual improvement occurred, and complete recovery was established about two months after the onset of the symptoms.

J. D. Rolleston.

A case of typhoid spine (*'Bull. méd. de l'Algérie,'* 1912, xxiii, *p.* 289).—**J. Curtillet** and **P. Lombard**.—A girl, aged 15 years, two months after mild typhoid fever developed severe pain in the lumbar region. The pain continued, and on admission to hospital four months after the onset there was considerable pain caused by pressure over the fourth and fifth lumbar vertebræ. All movement of the lumbar column was quite lost. On both sides of the trunk a zone of hyperæsthesia, four fingers' breadths wide, extended from the spine along the inguinal folds to the pubis. On the left another band of hyperæsthesia extended from the crest of the ilium to the knee. Gradual improvement followed immobilisation on a hard bed, but the symptoms had not entirely disappeared seventeen months after their onset. The X rays showed a diminution of the intervertebral space between the fourth and fifth lumbar vertebræ, and ill-defined and irregular borders of these vertebræ, especially on the left. J. D. Rolleston.

Fresh case of typhoid spine in a child (*'Arch. de méd. des enf.,'* 1912, xvi, *p.* 842).—**Ardin-Deltheil, M. Raynaud,** and **M. Coudray**.—A boy, aged 10 years, on the twenty-seventh day of a moderate attack of typhoid fever was seized with severe pain in the left lumbar region extending down the hip and thighs. Pressure on the spine and transverse processes of the third to fifth lumbar vertebræ caused intense pain, and any movement of the lumbar column was impossible. These symptoms were accompanied by hyperæsthesia on the inner aspect of the leg and thigh in the area of the fourth lumbar root, and by a meningeal reaction shown by hypertension and excess of albumin in the cerebro-spinal fluid. The X rays showed that there was an absence of the normal notching in the inter-vertebral spaces between the third and fourth and fourth and fifth lumbar vertebræ, and that the upper border of the fifth lumbar vertebra was ill-defined. Considerable relief was afforded by lumbar puncture, and complete recovery took place about two months after the onset. J. D. Rolleston.

Glandular diseases in children (*'Arch. f. Kinderheilk.,'* 1912, lviii, *p.* 103).—**D. Ssokolow** discusses extensively the literature of this subject with eighty-eight references and comes to the following conclusions: (1) It is the most frequent form of disease in childhood and the lymphatic glands are chiefly affected, especially the submaxillary and cervical glands. (2) Affections of the lymphatics of the organs are rarer; the mediastinal and tracheobronchial glands are more often diseased than the abdominal. (3) The disease may be acute, chronic or subacute, and develops from the penetration into the glands of non-bacterial or bacterial organisms, most frequently the tubercle bacillus, but the staphylococcus, streptococcus, pneumococcus, etc., are not uncommon. (4) The diagnosis of disease of the peripheral glands is generally easy since swelling and pain on pressure are usually present. (5) The diagnosis of the deeper-lying glands is more difficult, as there may be no objective data to rely upon save a rise in temperature, which may in any form of glandular disease set in acutely, with marked elevation, or be altogether absent. In some cases the fever may be slight and last for months or years. (6) The treatment should be conservative, and rubbing massage or extirpation should be avoided, save in the presence of well-marked purulent inflammation, when the pus should be removed. Where the glands are accessible warm applications should be employed. If the glands of the respiratory system are affected, pure cold air is essential, and

in cases of abdominal glandular mischief a non-exciting, non-fermentative diet is of especial importance. F. R. B. Atkinson.

Suprarenal insufficiency in infectious diseases (*'Thèses de Montpellier,'* 1911–12, *No.* 72).—**F. Granel.**—A suprarenal pathogeny offers an explanation of malignancy in infectious disease, the signs of general intoxication, asthenia, prostration, hypotension, and tachycardia being due to suprarenal failure, which is due partly to lesions of the glandular parenchyma (suprarenalitis) and partly to involvement of the solar plexus. Suprarenal opotherapy is therefore indicated in malignant cases of acute infectious diseases. The thesis contains the histories of eighteen illustrative cases, ten of which occurred in children aged from eighteen months to twelve years, suffering from scarlet fever, diphtheria, typhoid, measles, pneumonia and broncho-pneumonia. J. D. Rolleston.

Degeneration of the suprarenals and other glands in the termination of severe infections (*'Bull. et Mem. Soc. méd. Hôp. de Paris,'* 1912, xxxiii, *p.* 28).—**L. Ribadeau Dumas** and **P. Harvier** record ten cases in children, aged from four to fourteen years, suffering from typhoid fever, acute nephritis, pneumonia, scarlet fever, or diphtheria, who all presented a terminal syndrome characterised by vomiting, profuse green diarrhœa coinciding with sudden aggravation of the general condition, a fall of temperature, and the appearance of a scarlatiniform, morbilliform, or polymorphous rash. The syndrome was not always complete: thus the erythema might be absent, or there might be a rise instead of a fall of temperature. Two symptoms, however, were always present—extreme and early prostration, and a sudden fall of blood-pressure which, combined with other symptoms, suggested suprarenal insufficiency. In all these cases there were multiple lesions in the various glands. Some appeared to be in a condition of functional hypertrophy, such as the thyroid. In others, such as the para-thyroids and hypophysis, there was no notable change. In the suprarenals the lesions appeared to predominate, and consisted of albuminoid and granulo-fatty degeneration with œdema or degeneration with hæmorrhage, both ending in necrosis. The writers therefore regard the terminal syndromes of grave infections as the result of acute polyglandular insufficiency with suprarenal predominance, the symptoms of which may be mitigated by suprarenal medication.

J. D. Rolleston.

Dermatology and Syphilis.

Agenesis of the skin of the abdomen (*'La Med. de los Niños,'* 1912, xiii, *p.* 133).—**Guzman** and **Vargos** describe a fœtal monster born at the eighth month. The skin over the abdomen was absent, giving rise to an enormous tumour externally. The tumour consisted of a vascular membrane, from the centre of which projected the umbilical cord. The liver and intestines could be plainly seen within the tumour. The child lived fifteen hours. Vargos described two similar cases, in one of which he operated; the child died six days after from broncho-pneumonia. M. D. Eder.

Rudimentary marsupial pouch in man (*'Brit. Journ. Derm.,'* 1912, xxiv, *p.* 366).—**E. Ward** records this case in a healthy and well-developed

boy. In the mid-line over the lower part of the xiphisternum was a circular pocket, 1½ in. in diameter, lined by normal skin, and entered by an opening measuring ¼ by ⅛ in. There were no signs of scar-tissue or traces of old inflammation around or inside the pocket. J. D. Rolleston.

Toxic symmetrical erythema of the face (*'Siglo Medico,'* 1912, lix, *p.* 268).—**Briz.**—A child, aged 20 months, after eating something unusual and indigestible, was taken ill with vomiting and slight feverish symptoms. Briz was struck by the symmetrical erythematous patches on either cheek, sharply demarcated from the rest of the normal skin. The patches were of an intense red; there was nothing in the throat. With appropriate treatment all traces disappeared in forty-eight hours. The erythema, by its strict localisation, differed from the urticarias so common in the gastric disturbances of children. M. D. Eder.

Pellagra in children (*'Amer. Journ. Dis. Child.,'* 1912, iv, *p.* 172).—**J. R. Snyder** addressed letters to sixty physicians asking for various data regarding this disease. As a result of his inquiries he finds that the youngest case was a child aged 2 months, and that 10 per cent. of all pellagrins are children under fifteen years of age. Marked nervous symptoms are not common; heredity plays little or no part in its causation. The possibility of transmitting the disease by the mother's milk could not be disproved.
F. R. B. Atkinson.

Ten pellagrins in one family (*'Journ. Amer. Med. Assoc.,'* 1912, lviii, *p.* 1940).—**J. E. Knight** describes a family of eleven, ten of whom suffered from this disease; the youngest, a baby aged 2 years, was the only one who as yet showed no symptoms of the complaint. The corn-meal used by the family was found to be unfit for consumption. Corn in all forms was forbidden and intestinal antiseptics employed. At the time of publication all the patients were doing well. F. R. B. Atkinson.

A study of livedo (*'Thèses de Paris,'* 1911–12, *No.* 285).—**C. P. M. Guille.**—Livedo is characterised by a more or less confluent mottling of the skin, violet-red in colour, in marked cases involving the whole integument. The colour is best developed at the periphery of the limbs, and becomes less marked towards the trunk. The condition is met with in rings on the upper extremities and on the trunk (livedo annularis), and on the lower limbs as a wide-meshed network (livedo reticularis). There is no disturbance of sensation. Although as a rule fairly characteristic, livedo may be confounded with other lesions, especially ecchymotic measles, simple acrocyanosis, abnormal forms of purpura, and pityriasis rosea. It is transitory and paroxysmal when due to the action of cold alone (livedo calorica), but persistent when due to a disturbance of the general condition, such as a varicose state, rheumatism, hyperthyroidism, and tuberculosis. The prognosis depends upon the causal affection. Treatment must be both local (stimulating frictions and saline baths) and general (glycero-phosphates and thyroid or suprarenal opotherapy). The thesis, inspired by Comby, contains the histories of twenty-one cases, sixteen of which are in children aged from eight months to fourteen years. J. D. Rolleston.

Chronic urticaria cured by injections of nucleinate of soda (*'Lyon méd.,'* 1912, cxix, p. 100).—**MM. Weill, Gardère** and **Goyet** report

the case of a girl, aged 11½ years, who had suffered for four years from abdominal pains and urticaria, which appeared suddenly in the evening, rapidly spread over the limbs and abdomen, and only disappeared in the morning. Fifty cgm. of nucleinate of soda in 10 c.c. normal saline were injected into the thigh; two days later the attacks of urticaria ceased and did not return, and the number of leucocytes increased from 2000 to 20,000. The following days they fell rapidly to below normal. The action of the drug, however, was prolonged for seventeen days in spite of the rapid fall of leucocytosis. These facts suggest that the nucleinate of soda prevented the urticarial eruption by modifying the toxins of the organism, thanks to the multiplication of the number of leucocytes and the stimulation of the phagocytic formation.

VINCENT DICKINSON.

Infantile eczema and indigestion (*'Amer. Journ. Dis. Child.,'* 1912, IV, *p.* 219).—**H. P. Towle** and **F. B. Talbot** find that cases of indigestion in children showing an intolerance of fat are frequently associated with an acute inflammatory eczema, with a marked exudative tendency, whereas in those cases in which indigestion of solid foodstuffs dominated the picture, the eruption was only of moderate intensity, with little tendency to exudation, but at the same time they consider that indigestion occupies only an intermediate position, if any, in the production of eczema.

F. R. B. ATKINSON.

A case of dermatitis gangrenosa (*'Austral. Med. Journ.,'* 1912, I, *p.* 677).—**W. Chaplin.**—A boy, aged 14 years, recovering from empyema, presented a slight erythema 1½ in. from the spine on the left side and parallel to the spine to the extent of about 6 in. Papules and pustules arose which gradually sloughed until an area, 6 by 9 in., was one continuous raised slough. The treatment consisted of equal parts of ichthyol with glycerine dabbed into the papules in the early stage, and 2 drm. of ichthyol to an ounce of glycerine as a dressing. One in 2000 $HgCl_2$ wash was used as well. Boroglyceride ointment 1 in 8 was found to be the most soothing dressing for healing purposes. Skin-grafting by Thiersch's method was employed with success after the slough had come away.

F. R. B. ATKINSON.

Pyodermia due to diphtheria bacilli (*'Ann. de Derm. et de Syph.,'* 1912, 5 *sér.*, III, *p.* 82).—**A. de Verbizier** reviews the literature, and records a personal case in a girl, aged 7 years, suffering from catarrhal jaundice, who also had discharge from the right nostril, purulent vaginal discharge, pustules on the buttocks, and a boil on the right arm. Examination of the nasal and vaginal discharge revealed a larger number of organisms, which at first appeared to be gonococci, but afterwards proved to be pseudo-gonococci. As no improvement followed syringing the nostrils and vagina with a solution of potassium permanganate, further bacteriological examination was made, and showed diphtheria bacilli both in the nasal and vulvar pus. Antitoxin was injected, and rapid recovery ensued. Pus from the boil on the arm also showed diphtheria bacilli, which proved fatal to guinea-pigs within thirty hours from injection. Reference is made to Smith's case of diphtheria of the vulva (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, VIII, *p.* 371).

J. D. ROLLESTON.

Diphtheritic inflammation of the skin and subcutaneous tissue (*'Deut. Zeitschr. f. Chir.,'* 1912, CXV, *p.* 310).—**C. Deutschländer** classifies

this into (1) cutaneous diphtheria as an accompaniment of generalised diphtheria, and (2) cutaneous diphtheria as a localised and independent affection. Class 2 is further subdivided as follows: (1) Diphtheria of the skin that has undergone a pathological change—(*a*) true wound diphtheria; (*b*) diphtheria supervening on inflammatory skin processes. (2) Diphtheritic inflammation of the healthy skin—(*a*) ulcerative cutaneous diphtheria in which the superficial layers of the cutis are primarily involved; (*b*) phlegmonous cutaneous diphtheria in which the bacilli penetrate from the first into the subcutaneous tissue, producing an extensive brawny swelling, finally ending in necrosis and gangrene. The author records a personal case of this variety in a girl, aged 3 years, who, ten days after a plastic operation for poliomyelitis, developed a brawny infiltration in the adductor region where a plaster bandage had caused a slight excoriation. The inflammation extended over the front and inner side of the thigh, producing vesiculation and cutaneous gangrene. A pure culture of diphtheria bacilli was found. Slight improvement followed injection of antitoxin, but death took place from heart failure. No necropsy.

J. D. Rolleston.

Subcutaneous multiple tuberculous gummata in an infant (*'Arch. de méd. des enf.,'* 1912, xv, *p.* 599).—**R. Dupérié.**—A girl, aged 13 months, who had suffered for the last five months from multiple subcutaneous indurations, died from acute meningitis due to the tubercle bacillus of Koch and meningococcus. Only six cases had been found in the literature where these two organisms were associated.

F. R. B. Atkinson.

Facial asymmetry in a case of scrofuloderma (*'Med. Record,'* 1912, II, *p.* 291).—**M. Zigler** records a case of a girl, aged 12 years, in whom the right side of the face was very much more prominent and protruded considerably forwards, while the left appeared to recede. The right eye and ear, right ala nasi and right side of mouth were all on a higher plane than the left. X rays showed that the right antrum of Highmore was smaller than the left. An incrusted lesion was found over the upper part of the sternum as well as ulceration of the right buttock. Von Pirquet positive, Wassermann negative. Rapid recovery followed applications of solid carbon dioxide with creosote internally.

J. D. Rolleston.

Hyperhidrosis circumscripta (*'Journ. Amer. Med. Assoc.,'* 1912, lix, *p.* 1193).—**R. L. Sutton** describes a case in a boy, aged 6 years, in whom the lesions were confined to the inner extremity of the left eyebrow. The infant became apparently normal at the end of three weeks' application of the Röntgen rays, applied bi-weekly.

F. R. B. Atkinson.

Verruca seborrhoica juvenilis (*'Amer. Journ. Derm.,'* 1912, xvi, *p.* 424).—**W. P. Cunningham** records five cases in children below the age of ten years—three in girls and two in boys. The condition has not been previously described. The lesions, which were numerous on the face and hands, were small, flat, and rounded or polygonal elevations, somewhat darker than the surrounding skin, and with a tiny scale on the top. After the use of resorcin lotion the lesions settled down to the level of the surrounding skin, and broadened out into well-defined scaly patches of an unmistakable seborrhœic character. After a few more applications of the lotion they disappeared entirely.

J. D. Rolleston.

Tylosis palmaris et plantaris, with report of three cases (*'Edin. Med. Journ.,'* 1912, VIII, *p.* 342).—**L. Thatcher** describes three children, a boy aged 11 years 7 months, a girl aged 7 years 5 months, and a boy aged 5 years 11 months, of one family suffering from this condition. It was completely absent at the normal flexures and areas of no pressure. The treatment adopted was as follows: Complete rest, starch poultices, soaking in a strong solution of carbonate of soda, scraping off as much of the softened *débris* as possible, and then applying 3 per cent. salicylic acid plaster. At times acidi salicyl. gr. xxx, ichthyol ʒj, ol. olivæ ♏xxx, lanolini ʒj was applied instead. After some months all marked thickening had disappeared, and the children could get about easily. Three years later the condition was as bad as before. F. R. B. Atkinson.

Mongolian blue spots (*'Arch. de méd. des enf.,'* 1912, XV, *p.* 446).—**A. Bruch** reviews the literature (*vide* British Journal of Children's Diseases, 1912, IX, *p.* 42), and states that in Tunis these spots are frequently seen in the native children. In some there is only a single small spot, while others show large patches. They possess a medico-legal interest, in that they may be mistaken for bruises. J. D. Rolleston.

Extensive pigmented and hairy nævus (*'Journ. Amer. Med. Assoc.,'* 1912, LVIII, *p.* 1190).—**H. Fox** records a case in a girl, aged 4½ years, in whom the lesions had been present since birth, but the pigmentation had gradually become darker and the hair more profuse. No family history. General health and intelligence good. The greater part of the nævus consisted of a solid symmetrical sheet involving the lower two-thirds of the trunk and the upper three quarters of the thighs. The colour was brown, mottled by black spots. The greater part of the area was covered by abundant dark hair, most marked on the front of the thighs. The remaining parts of the body, including the face and scalp, presented a large number of pigmented spots, the larger covered with hair and the smaller smooth. There were also three soft tumours on the lower part of the back, and another three arising from the labia majora. Some improvement had been obtained in the lesions on the face and hands by application of nitric acid, phenol, and carbonic acid snow. A review of the literature is appended.
J. D. Rolleston.

A simple stain for the Spirochæta pallida (*'Journ. Amer. Med. Assoc.,'* 1912, LVIII, *p.* 1682).—**Ruth Tunnicliff** has found that this organism stains readily, usually in two or three seconds, with a 10 per cent. mixture of a saturated alcoholic gentian-violet solution in 5 per cent. phenol. A very thin smear is essential for obtaining a satisfactory stain of fresh material.
J. D. Rolleston.

Chancre of the scalp (*'Thèses de Paris,'* 1911–1912, *No.* 398).—**G. Rabourdin** has collected thirty-eight cases from literature, four of which occurred in the newborn, and seven in children aged from three to six years. In the newborn the chancre is of obstetrical origin and is due to extra-uterine infection. The other children had been contaminated by their syphilitic mothers' kisses or by the use of an infected comb. In two cases the scalp had been the seat of pre-existent lesions, pediculosis and prurigo respectively (*cf.* British Journal of Children's Diseases, 1912, IX, *p.* 44).
J. D. Rolleston.

Icterus in congenital syphilis (*'Deutsch. med. Woch.,'* 1912, XXXVIII, *p.* 756).—**O. Rosenberg** records illustrative cases of the following: (1) Severe congenital icterus due to obstruction of the large bile-ducts by a portal gumma (periphlebitis gummosa). (2) Severe icterus cured by anti-syphilitic treatment and probably due to a gummatous cholangitis. (3) Severe icterus occurring during the early eruptive period with parenchymatous degeneration of the liver-cells without any interstitial inflammation. (4) Icterus also occurring during the eruption period but associated with a high degree of pre-existent interstitial hepatitis. (5) Icterus occurring in the eruptive period complicated by coexistent infective disease. J. D. ROLLESTON.

Craniotabes and heredo-syphilis (*'Ann. de méd. et chir. inf.,'* 1912, XVI, *p.* 481).—**Leroux** and **Labbé,** from examination of 32 cases, come to the conclusion that craniotabes is an osseous dystrophy due to multiple causes, among which heredo-syphilis plays a preponderating part, but not unique, for other heredities, especially heredo-tuberculosis and heredo-alcoholism, may also have an influence. In the thirty-two cases examined heredo-syphilis was found (alone or associated) in seventeen, heredo-tuberculosis in five, heredo-alcoholism in two, other heredities in three, causes unknown in five. The authors remark that craniotabes generally occurs in infants affected by dystrophic heredity, usually born prematurely or debilitated, infants whose nutrition has suffered during pregnancy. This complex ætiology of craniotabes is exactly the same as that of rickets, of which it is an early manifestation. The preponderance of heredo-syphilis in the ætiology of craniotabes would therefore appear to be due to its being a predisposing cause of rickets. C. F. MARSHALL.

Mortality and proportion of backward children in cases of congenital syphilis followed subsequent to hospital treatment (*'Boston Med. and Surg. Journ.,'* 1912, II, *p.* 278).—**W. P. Lucas** records his investigations in a series of 59 cases, whom he classifies as follows: (1) 19 were apparently mentally normal; 5 of these were of school age, ranging from six to sixteen years, 10 were between two and six years, and 4 were under two; (2) 19 were backward mentally, of whom 11 were of school age, ranging from six to sixteen years, and 8 between two and six years; (3) 21 had died. The heavy mortality and high percentage of backward children are attributed to not following up the initial treatment. In many cases this was discontinued as soon as the eruption had disappeared.

J. D. ROLLESTON.

Exception to Profeta's law (*'Presse méd.,'* 1912, XX, *p.* 664).—**Vilanova.**—A man infected with syphilis in 1907 married the same year and became a father in 1908. There was then no sign of syphilis in mother or child. The child was kept under observation for two years and showed no sign of syphilis. In March, 1911, the woman was found to have a chancre of the right breast with well-marked enlargement of the right axillary glands. She had now a second child, which presented mucous tubercles on the lips and an eruption on the soles. In spite of intense mercurial treatment the woman had an attack of malignant syphilis. [This case is really an exception to Colles's law, not to Profeta's.—J. D. R.]

J. D. ROLLESTON.

Wassermann reaction in infants and children (*'Amer. Journ. Dis. Child ,'* 1912, III, *p.* 363).—**F. S. Churchill** employed the reaction in 102

children, aged from three days to twelve years, admitted to hospital with various diseases, but none as a case of syphilis. A positive result was obtained in 39 cases; 24 of these gave suggestive physical signs; in 5 there was a suggestive family history or positive personal record, and in 10 there was no family history, personal record, or physical signs suggestive of syphilis. Possibly some of these were cases of *syphilis hereditaria tarda*, of which the symptoms would appear later, but in three fatal cases in his group there was no gross or microscopic evidence of syphilis post mortem. The greatest number of positive results was obtained in diseases of the bony, nervous and circulatory systems, which are particularly apt to be attacked by syphilis. J. D. Rolleston.

Value of Wassermann's reaction in hereditary syphilis (*'Presse méd.,'* 1912, xx, *p.* 271).—**E. Andronesco** and **P. Saratzeano** tested twenty-two children and thirteen mothers by Wassermann's original method. In eighteen of the children and twelve of the mothers there was a positive reaction. The fathers' blood was examined in two cases and found positive in one. The one negative maternal case was not one of syphilis either in the parent or child. Several of the children who reacted positively were suffering from diseases of doubtful ætiology, *e. g.* Little's disease, alternating hemiplegia, and hæmophilia. The authors' conclusions are as follows: (1) Colles's law is quite correct; (2) mothers of syphilitic children give as positive a Wassermann as cases of florid syphilis; (3) the number of births has no influence upon the reaction; (4) the Wassermann reaction is more intense in congenital syphilitic children than in their mothers who are free from visible lesions. Christopher Rolleston.

Rickets and Wassermann's reaction (*'Gazz. d. osp.,'* 1912, xxxiii, *p.* 642).—**D. Caffarena** tested Wassermann's reaction in twenty rickety children and found it positive in six. Two children whose blood gave a positive reaction gave a negative reaction with their cerebro-spinal fluid. The literature is reviewed, special reference being made to the work of Marfan and the relationship of rickets to syphilis (*vide* British Journal of Children's Diseases, 1907, iv, *p.* 504). J. D. Rolleston.

Employment of salvarsan in infants and young children (*'Arch. of Ped.,'* 1912, xxix, *p.* 654).—**L. E. La Fetra** within the last year has treated 25 cases of congenital syphilis, aged from six weeks to two years, at the Bellevue Hospital, New York; 10 received salvarsan, with or without mercury, and 15 were treated with mercury alone. Of the former only 2 died; all the rest showed marked gain in weight and improvement in the general condition in addition to disappearance of specific symptoms. Of the latter, 3 improved, 2 were not improved, and 10 died. The dosage of salvarsan recommended was not less than 0·01 gramme per kilo weight. J. D. Rolleston.

Salvarsan in congenital syphilis (*'Deut. med. Woch.,'* 1912, xxxviii, *p.* 761).—**E. Andronescu,** of Bucharest, used the indirect method in three cases, with good results in two, aged 3 months each, and the direct method in six, with success in four, aged 1 month, 6 weeks, 7 months and 4½ years. J. D. Rolleston.

Hereditary syphilis treated with "606" (*'Gazz. internaz. d. med. chir., etc.,'* 1912, *pp.* 652, 727 and 776).—**L. Maccone** records ten cases in

children aged from eighteen months to twelve years. Five recovered, four showed some improvement, and in one there was no change. Of nine who at first gave a positive Wassermann's reaction, eight became negative after treatment. Maccone thinks that "606" is an efficient remedy in the secondary generalised forms of heredo-syphilis. In the tertiary localised forms it is less active, while in the quaternary and quinary or dystrophic forms its rection is *nil*. Intra-muscular injections into the gluteal region constitute the best method. The intra-venous route should be reserved for older children. Salvarsan treatment should be followed by a course of mercury, and Wassermann's reaction should be tested six months or a year after the cessation of all treatment. J. D. Rolleston.

Elimination of "606" by the mother's milk (*'La Pediatria,'* 1912, x, *p.* 295).—**D. Caffarena** conducted nine experiments with a view to clearing up the difference of opinion which exists on this subject. He found that arsenic was eliminated by the milk after intra-venous or intra-muscular administration of "606," and that the duration of its elimination was two to three days if the injection was intra-venous and ten to twelve days if it was intra-muscular. These results agree with those of Hoppe, Fischer, and Freupel. Repeated intra-muscular injections of the mother, therefore, give the best results, since by this method the child is subjected to the most prolonged influence of the drug. Intra-muscular injections are also preferable to intra-venous, since bad results have been observed by several authors after the latter. Jesionek explained this effect by the supposition that "606" introduced directly into the blood caused a rapid destruction of a large quantity of spirochætes with liberation of an excess of endotoxin, whose elimination began before the maternal organism had time to produce as a defensive reaction the antagonistic substance, *i. e.* antitoxin.

Vincent Dickinson.

Rectal absorption of "606" in children (*'Lyon méd.,'* 1912, cxix, *p.* 45).—**Weill, Morel** and **Mouriquand** were led by the difficulties of intra-venous injection in young children to administer the drug *per rectum*. There was total absence of any rectal or general reaction even after injection of 40 cgm. of salvarsan. The children treated were from ten to thirteen years of age. A dose of 10 cgm. was first given, the second contained 20 cgm., the third 40 cgm. The same technique was followed as was laid down by Ehrlich for intra-venous injections, five to ten drops of laudanum being added to the solution to ensure rectal tolerance. It must be retained as long as possible—four hours at least. The authors found that the arseno-aromatics and particularly salvarsan were easily absorbed by the mucous membrane of the child; that this absorption caused amelioration of a marked character in certain cases of hereditary syphilis and severe chorea. Excepting in urgent cases the rectal route is to be preferred in children, as it has sufficient activity without causing any local or general reaction.

Vincent Dickinson.

Reviews.

Studies in Clinical Medicine. By C. O. Hawthorne, M.D. London: John Bale, Sons & Danielsson, 1912. Pp. 441, 46 illustrations in the text. Price 6s. net.

The papers and clinical lectures collected together in this volume represent the active work of a general physician who, though he appears to be specially interested in neurology, has a broad outlook on medicine. Most of the articles have been published before, but the author says that they have all been revised and that some have been partly rewritten. The subjects dealt with are of great interest, and reflect credit on the author for the careful way in which he has worked up the clinical material at his disposal. There is a series of articles on rheumatism and its manifestations, among which subcutaneous nodules are considered at length. Dr. Hawthorne's experience as physician to an ophthalmic hospital provides material for papers on the practical bearing of retinal changes on general medicine; for example, "on the diagnosis of pernicious anæmia," and "on retinal embolism, with two cases in which a normal standard of central visual acuity was retained." There is a note "on sudden greyness of the hair," in which reasons are brought forward in support of the popular belief that this really does occur. As there are articles on renal disease, infective endocarditis, on affections of the respiratory and alimentary systems, on drug idiosyncrasies, and a number on nervous disorders, it is unlikely that anyone will take up this well-illustrated book without finding something attractive. H. D. R.

Goulstonian Lectures on Modern Views upon the Significance of Skin Eruptions. By H. G. Adamson, M.D., F.R.C.P. Physician for Diseases of the Skin, St. Bartholomew's Hospital. London: John Bale, Sons & Danielsson, 1912. Pp. 103. Price 3s. 6d. net.

In his Goulstonian lectures Dr. Adamson gives us a clear account of modern views on the subject of dermatology, a branch of medicine which concerns the pædiatrist almost as much as the dermatologist. He shows us that many of the various skin eruptions are not to be regarded as distinct morbid conditions, but as cutaneous reactions to physical, microbic or toxic agents which damage the skin, the form of eruption differing according to the type of cell reaction which produces them, *i. e.* according to the part of the skin which is damaged and the severity of the damage. He discusses the question of immunity in skin diseases, and shows that there is evidence of this in streptococcal impetigo, ringworm, favus, and lupus. He regards vaccine treatment as useful in staphylococcic infections, but not in acne, and concludes that immunity reactions are at present of little value in the treatment of skin diseases. The part played by toxins and autotoxins in the production of skin affections is ably described. The phenomenon of anaphylaxis is also discussed, and Dr. Adamson remarks that this phenomenon suggests that drug eruptions are produced by toxic albumins resulting from the action of the drugs on the cells, and not by the physiological action of the drugs themselves.

Dr. Adamson considers that the influence of the nervous system in the production of eruptions is a limited one, and that some affections, such as

lichen planus, alopecia areata, and pemphigus, which have been attributed to this influence, are more probably of toxic origin. The chief eruptions in which there is clear evidence of nervous origin are herpes zoster, hyperidrosis, and glossy skin. He discusses the causes which influence the distribution of eruptions, and changes in the soil which favour the growth of one parasite but not another. As an example of the latter he mentions that some change in the sebaceous secretion at puberty probably suits the acne bacillus, but not the ringworm fungus. Dr. Adamson is to be congratulated on his lucid exposition of a difficult subject, and we would recommend every student to study this little book before losing his bearings in the maze of the ordinary text-book on dermatology. C. F. M.

L'Arséno-Benzol chez la femme enceinte et les nourrissons dans le traitement de l'Hérédo-Syphilis. By Dr. Louis Scoffier. Paris: Jules Rousset, 1912. Pp. 227.

This book describes in an attractive way the methods of treatment of hereditary syphilitic children, and especially the employment of arseno-benzol for such patients. While acknowledging the success obtained in the past with mercury, the author claims that in certain cases arseno-benzol is preferable, and his views should be read by all interested in pædiatrics.

It seems to us that perhaps he rather over-estimates the good results which can be obtained by injecting the mother with "606" while she is suckling her syphilitic baby. The amount of arsenic contained in such milk is almost infinitesimal, and, even if the drug does cause the formation of endotoxins in the mother, it is not certain that large quantities of anti-toxins pass to the infant. And the eighteen cases collected here do not by any means include all the literature of the subject, and some very unsuccessful cases have been recorded.

An excellent description of laboratory methods of diagnosis is given, and the various techniques are ably discussed and differentiated.

Dr. Scoffier adds some interesting details of cases of hereditary syphilis which have been under his personal observation. These include sixteen cases in which the syphilitic infant was injected with arseno-benzol, sometimes on more than one occasion, but always intra-muscularly. In the majority of cases the results were very successful, the disease was cured, at least temporarily, and accidents, such as necrosis or the formation of abscess at the point of injection, extremely rare. But of these sixteen cases, three died, and it is, of course, mere speculation to wonder whether these patients would have done better if they had been injected intra-venously. At any rate, we shall be interested to see what results Dr. Scoffier obtains in his next series of cases, if that includes some of intra-venous injection in infants.

He appears to have obtained good effects from the injection of the mother during pregnancy with "606," as in the three reported cases the child was born healthy and apparently free from syphilitic manifestations. But in one pregnant woman, who had had twelve injections of mercury at the beginning of the year, he further injected four decigrammes of arseno-benzol in July, although she showed no symptoms of syphilis. Such injection of pregnant women does not appear to have any unfavourable influence on the pregnancy, and the children are born at full term.

In conclusion, the author states his belief that arseno-benzol is the best drug to employ in the treatment of hereditary syphilis. J. L. B.